The 7th International Clinical Oncology Congress

The 17th Iranian Annual Clinical Oncology Congress

2-4 February 2023

Iranian Society of Radiation (Clinical) Oncology

President of Congress: Dr. Yasha Makhdoumi
Scientific Committee Chairperson: Dr. Roham Salek
Executive Committee Chairperson: Dr. Nima Mousavi

Scientific Chairperson of Oncology Nursing: Dr. Maryam Rassouli
Scientific Chairperson of Clinical Radiobiology: Dr. Hossein Mozdarani
Scientific Chairperson of Medical Physics: Dr. Mohammad Mohammadi
Scientific Chairperson of Radiotherapy Technologists: Ms Simin Abbasi

ISRO Iranian Society of Radiation Oncology

ISCO-ESMO Joint Session ESMO

Unit # 4, 1st Floor, No # 63, Tousi St.,
Tohid Ave., Tohid Sq., Tehran-IRAN
Tel: 0098 (21) 66567619
Fax: 0098 (21) 66567620

The Seventh International Clinical Oncology Congress

The 17th Iranian Annual Clinical Oncology Congress

2-4 February 2023
Tehran-Iran

President of Congress: Dr. Yasha Makhdoumi
Scientific Committee Chairperson: Dr. Roham Salek
Executive Committee Chairperson: Dr. Nima Mousavi
Scientific Chairperson of Oncology Nursing: Dr. Maryam Rassouli
Scientific Chairperson of Clinical Radiobiology: Dr. Hossein Mozdarani
Scientific Chairperson of Medical Physics: Dr. Mohammad Mohammadi
Scientific Chairperson of Radiotherapy Technologists: Ms Simin Abbasi
Publisher: MirMah Publishing Co.

Unit # 4, 1st Floor, No # 63, Tousi St., Tohid Ave., Tohid Sq., Tehran-IRAN
Tel: 0098 (21) 66567619 Fax: 0098 (21) 66567620
iscocongress.com

Sponsors


ACTERO
DEVELOPING FUTURE
AQVIDA
AXTG
Arya Tina Gene
Biopharmaceutical Co.
AstraZeneca
Cedal
Thinking of Patients
behestan
darou
CinnaGen
abidi
Oncology
Erica Pharmed
Leading the way
فن آوری آزمایشگاهی
MERCK
Matlab Arefan Eng.Co
Medical Healthcare Authorized
MSD ONCOLOGY
NANOALVAND
NANODARU
Orchid Pharmed
Pierre Fabre
Oncology
M.Rasoolzadeh & Co.
سامان تابش امید
SBS Medical Ind.
Sobhan
Oncology
Keeping Hope Alive
GCC
GISO.CO
GISO COOLING CAP
Pooyesh Darou
Biopharmaceutical Co.
کیمیا
HOMA PHARMED
Pharmaceutical Co.
VARIAN
PHARMED
PARS
ISOTOPE
company
SANDOZ
A Novartis
Division


ISRO
Iranian Society of
Radiation Oncology


ISCO-ESMO Joint Session
ESMO


CANCER RESEARCH CENTER
MASHAD UNIVERSITY OF MEDICAL SCIENCES


انجمن اورولوژی ایران
Iranian Urological Association


انجمن متخصصین گوارش و کبد ایران
IAGH
Iranian Association of Gastroenterology and Hepatology


مرکز تحقیقات پرتودرمانی سرطان
Radiation Oncology Research Center
RORC


Shiraz University of Medical Sciences
Institute for Cancer Research
Shiraz Iran


جامعه پزشکان متخصص داخلی ایران
Iranian Society of Internal Medicine


IRSGO


انجمن علمی آسیب شناسی ایران
IRANIAN SOCIETY OF PATHOLOGY


CRC
Cancer Research Center


CRC
Clinical Cancer Research Center
مرکز تحقیقات بالینی سرطان
بیمارستان سینا

The 7th International Clinical Oncology Congress

The 17th Iranian Annual Clinical Oncology Congress

ISRO
Iranian Society of Radiation Oncology

ISCO-ESMO Joint Session
ESMO

Dr. Yasha Makhdoumi
President of ISCO

In the Name of God

This congress will be held from 2nd to 4th February 2023, with the participation of national and international experts and specialists at the Olympic Hotel in Tehran. The scientific secretary of this congress is Dr. Roham Salek and the executive secretary is Dr. Nima Mousavi.

The main purpose for holding this congress is to improve and update the knowledge of specialists, residents, physicians and nurses, in the field of cancer diagnosis and treatment.

In this congress, the latest and newest scientific achievements in oncology, radiotherapy technology, medical physics, radiobiology, oncology nursing and other topics will be presented.

Furthermore, national and international speakers from United Kingdom, Germany, Australia, Turkey, as well as the World Health Organization, International Agency for Research on Cancer (WHO-IARC) will present their latest findings in the field of cancer.

هفتمین کنگره بین المللی و هفدهمین همایش سالانه کلینیکال انکولوژی سیزدهم تا پانزدهم بهمن سال جاری با حضور اساتید و صاحب‌نظران برجسته از داخل و خارج از کشور برگزار می‌شود. دبیر علمی این کنگره آقای دکتر رهام سالک و دبیر اجرایی آقای دکتر نیما موسوی هستند.

در راستای مأموریت انجمن رادیوانکولوژی ایران مبنی بر ارتقای دانش و توانمندسازی متخصصان، دستیاران، پزشکان و پرستاران، به روزرسانی دانش بومی در حوزه تشخیص و درمان سرطان، یافته‌های ارائه‌شده در کنفرانس‌های بین‌المللی مانند ESMO نیز در این کنگره تشریح خواهد شد. همچنین در این کنگره جدیدترین دستاوردهای علمی در مورد فیزیک پزشکی، تکنولوژی پرتودرمانی، رادیوبیولوژی، پرستاری انکولوژی و مباحث دیگر ارائه خواهد شد.

سخنرانان داخلی و خارجی از کشورهای چون انگلستان، آلمان، استرالیا، ترکیه، آمریکا و هم‌چنین از سازمان بهداشت جهانی (آژانس بین‌المللی تحقیقات سرطان) در این کنگره ارائه خواهند داشت.

دکتر یاشا مخدومی

رئیس انجمن رادیوانکولوژی و کنگره کلینیکال انکولوژی ایران

Dr. Roham Salek
Scientific Secretary

Dr. Nima Mousavi
Executive Secretary

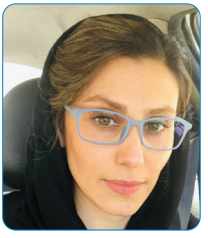
On behalf of the scientific committee and organizing committee, we are honored to welcome all the presenters and attendees to the **7th international clinical oncology congress** of Iran. With brilliant specialist from several cancer centers across Iran and also other countries, we hope for a successful conference benefiting all the participants with the latest updates in radiotherapy and oncology. Alongside, the conference provides a perfect time for networking with the colleagues and getting familiar with the latest progression of country's cancer pharmacies industry and technologies.

We hope you all enjoy the 2023 congress. Thank you for your participation.

هفتمین کنگره سالیانه بین‌المللی کلینیکال انکولوژی ایران با همت و همراهی همکاران برگزار می‌گردد. این همایش بهترین فرصت برای شنیدن سخنرانی‌های علمی، ارتباط با همکاران و آشنایی با پیشرفت‌های دارویی و تکنولوژیک می‌تواند باشد. به نمایندگی از کمیته علمی و اجرایی از تمامی عزیزانی که در این شرایط یاورمان در اجرای کنگره بوده‌اند و از تمامی شرکت‌کنندگان در این برنامه سپاسگزاریم. امیدواریم ماحصل تلاش همکاران برنامه‌ای در شان جامعه انکولوژی ایران بوده و بستر مناسبی برای تبادل دانش و تجربه میان متخصصین فراهم کند. امید که نتایج حاصل از این نشست علمی گامی باشد در جهت بهبود کیفیت خدمات درمانی در بیماران مبتلا به سرطان در کشور عزیزمان ایران.

دکتر رهام سالک
دبیر علمی کنگره

دکتر نیما موسوی
دبیر اجرایی کنگره

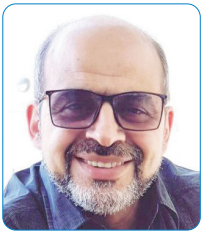


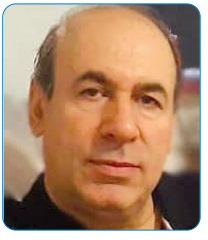
Simin Abbasi

...

Dr. Mohammad Mohammadi

...





Dr. Hossein Mozdarani

...

Nader Sepanlou

...

Greetings to Iranian Radiation Therapy disciplines and respected practitioners, and wishing for progress and improvement in all fields of treatment, we are proud to hold a joint meeting on radiation therapy technology, radiation therapy physics, and radiation biology at the **7th International Clinical Oncology Congress** will be held on 2nd to 4th February 2023, at Tehran, Iran. We hope the participation of radiation therapy disciplines in the meeting brings an opportunity to discuss about challenging issues and to assist the radiation therapy community to achieve desired visions.

Although, nowadays, we are running slightly far from appropriate standards and criteria of treatment deserved for our society, we hope the possibility of dialogue, networking and communications can reduce the existing gaps and to improve the quality of the services provided. We believe that all available capacities in the country are not applied properly. Along with the equipment and

tools in radiotherapy centers and human resources training we have a significant capacity to deliver more efficient treatment, which represents deserved services through a reasonable expanse.

This conjoint meeting, organized by the Iranian Society of Radiation Oncology (ISRO), is able to introduce new and professional horizons, and constraints we are encountered. This type of gathering can bring consensus and cooperation between different disciplines who are involved with radiation therapy. As a result, this definitely increases the quality package for the entire radiation therapy teams. At this stage, we are aware that we will not be able to handle this task without thinking together and without knowing each other's strengths and without respecting and praising each other's capabilities.

The joint meeting of radiation therapy technology, radiation therapy physics, and radiation biology, while acknowledging the organizers, welcoming the participants in different sections of the congress, will be beneficial for the participants.

In the meeting, the following topics will be discussed:

1) Treatment planning in radiation therapy with a focus on machine learning concepts,
2) Education, training and documentation for radiotherapy disciplines,
3) Brachytherapy with concentration on prostate treatments
4) External radiation therapy, quality assurance and radiation biology
5) Imaging in radiation therapy
6) Radiation safety and quality management in radiation therapy with a focus on error analysis.

بـا درود بـه پیشـگاه کارکنـان و دسـت‌اندرکاران پرتودرمانـی ایران و بـا آرزوی پیشـرفت و ایجـاد دگرگونـی در تمامـی عرصه‌هـای درمان افتخـار آن داریـم کـه در هفتمیـن گنکـره بین‌المللـی کلینیـکال انکولوژی، نشست مشـترک فن‌آوری پرتودرمانی، فیزیک پرتودرمانی، و زیست‌شناسـی پرتـوی را برگـزار کنیـم. امیـد کـه همراهـی کارکنان بخش‌های پرتودرمانی در این نشسـت، مجالی برای گفتگو و بررسـی مسـائل چالشـی فراهم کند و جامعـه‌ی پرتودرمانی را در رسـیدن به چشـم‌اندازهای دلخـواه یـاری کند.

اگـر چـه امـروزه بـا اسـتانداردها و معیارهـای شایسـته جامعـه فاصلـه داریـم، امیدواریـم امـکان گفتگـو و تبـادل دیدگاه‌هـا بتواند گسسـت‌های موجـود را کاهـش و کیفیـت خدمـات ارایـه شـده را بـه شـیوه‌ای درخـور بیفزایـد. مـا بدین بـاور هسـتیم کـه از تمامی ظرفیت‌هـای موجود در کشـور برای بهبـود کیفیت درمان اسـتفاده نشـده اسـت. در کنـار تجهیـزات و ابـزار در نقـاط دور و نزدیـک کـه ظرفیـت فراوانـی بـرای کارآمدسـازی سـامانه‌های درمـان دارنـد، آمـوزش نیروی انسـانی می‌تواند شـرایط بهتـری را بـا کمترین هزینه بـرای مـا فراهم سـازد.

این نشسـت مشـترک که به همت انجمن کلینیکال آنکولـوژی برگزار می‌شـود، مـا را بـا تازه‌هـا و تنگناهـای حرفـه‌ای بخش‌هـای خود و دیگـر بخش‌هـا آشـنا می‌سـازد. ایـن دسـت نشسـت‌ها می‌تواننـد همفکـری و همراهـی بخش‌هـای گوناگـون پرتودرمانـی و در نتیجه افزایـش کیفیـت را برای کل مجموعـه‌ی پرتودرمانی رقـم زنند. نیک

می‌دانیم که بدون هم‌اندیشی و بدون آگاهی از توان یکدیگر و بدون احترام و ستایش از قابلیت‌های هم از عهده‌ی این مهم بر نخواهیم آمد.

نشست مشترک فن‌آوری پرتودرمانی، فیزیک پرتودرمانی، و زیست‌شناسی پرتوی ضمن قدردانی از برگزارکنندگان، به شرکت‌کنندگان در بخش‌های مختلف کنفرانس خوشامد گفته و امید است برگزاری این نشست دستاورد درخوری برای شرکت‌کنندگان داشته باشد.

در این نشست، محورهای زیر مورد بحث و بررسی قرار می‌گیرد:

۱) طراحی درمان در پرتو درمانی با تمرکز بر آموزش ماشین‌ها
۲) فراگیری، آموزش و مستندسازی برای کارکنان بخش رادیوتراپی
۳) براکی تراپی با تمرکز بر درمان‌های پروستات
۴) شگردهای پرتودرمانی خارجی، تضمین کیفیت و زیست‌شناسی پرتوی
۵) تصویربرداری در پرتودرمانی
۶) ایمنی پرتوی و مدیریت کیفیت در پرتودرمانی با تمرکز بر تحلیل خطاها.

نادر سپانلو **سیمین عباسی**
دکتر محمد محمدی **دکتر حسین مزدارانی**

برگزارکنندگان نشست فن‌آوری پرتودرمانی، فیزیک پرتودرمانی، و زیست‌شناسی پرتوی

Dr. Maryam Rassouli
Professor, SBMU
Director General, Nursing Services, MoHME

The incidence of serious and incurable diseases with long-term and complex care needs is one of the challenges that raises the need for immediate and appropriate attention which require expanding palliative care services, especially in developing countries, including countries in the Eastern Mediterranean region. A wide range of diseases, including different types of cancer, cardiovascular disorders, neurological disorders, HIV/AIDS, chronic lung and kidney diseases are known as diseases that require palliative care, which, despite significant advances in various fields of treatment and care, are still encountered with uncertainty. In some cases, the disease is diagnosed when only palliative care services are applicable for the patient.

An overview of the palliative care situation in many countries of the region, including our country, shows that the existing conditions in terms of many indicators of palliative care development are not favorable and require serious action. Although the integration of the palliative care system into health system and primary health care, policy making in the field of providing palliative care, the existence of specific laws,

the transparency of the financial mechanism and insurance coverage of these services, the existence of an independent system of palliative care for children, the existence of clinical guidelines, evidence-based care and research are considered as the main requirements for the establishment of palliative care, all the conducted studies put the empowerment of care providers, especially nurses and doctors, at the top of all measures and requirements, and they consider the improvement of their knowledge, attitude and performance as the key to providing quality palliative care.

Considering that recent research in the field of care providers' knowledge and attitudes in Iran, the lack of knowledge in care providers and the need to address the topic of palliative care has been recognized essential. Including this subject to the nursing and medical education programs and hold training courses, is necessary. Therefore, one of the goals of the health promotion and nursing services office of the Ministry of Health is empowering nurses in the field of providing palliative care. In this regard, the holding of the Clinical Oncology Congress provides a suitable opportunity to emphasize the importance of teamwork as one of the basic pillars of palliative care while presenting related topics. While expressing gratitude to the organizers of this congress and the scientific and executive team, it is hoped that in the near future, we will provide palliative care as a part of the services provided to all the people of our country.

بـروز بیماری‌های جـدی و صعب‌العلاج بـا نیازهای مراقبتـی طولانی‌مدت و پیچیـده، یکـی از چالش‌هایی اسـت که ضرورت توجه فوری و مناسـب و الزام گسـترش خدمـات مراقبت تسـکینی را به ویژه در کشـورهای در حال توسـعه از جمله کشـورهای منطقه مدیترانه شـرقی مطـرح می‌کند. طیف وسـیعی از بیماری‌هـا از جملـه انـواع سـرطان‌ها، اختلالات قلبـی عروقی، اختـلالات عصبـی، ابتـلا بـه اچ‌آی‌وی / ایـدز، بیماری‌های مزمـن ریوی و کلیوی به عنوان بیماری‌های نیازمند مراقبت تسـکینی شـناخته شـده‌اند کـه علیرغـم پیشـرفت‌های چشـمگیر در عرصه‌هـای مختلـف درمانـی و مراقبتـی، همچنان درمان قطعی بـرای آن‌ها وجود نداشـته و در مواردی، بیماری زمانی تشـخیص داده می‌شـود که صرفاً اقدامات مراقبت تسکینی برای بیمـار قابل اجرا می‌باشـد.

مـروری بـر وضعیـت مراقبـت تسـکینی در بسـیاری از کشـورهای منطقـه و از جملـه کشـورمان نشـان می‌دهـد شـرایط موجـود از نظـر بسـیاری از شـاخص‌های توسـعه‌یافتگی مراقبت تسـکینی، وضعیت مطلوبی نداشته و نیازمنـد اقدام جدی می‌باشـد. اگرچـه ادغام نظام مراقبت تسـکینی در خدمات نظـام سـلامت و مراقبت‌های اولیه بهداشـتی، سیاسـتگذاری در حـوزه ارائـه مراقبت تسـکینی، وجود قوانین مشـخص، شـفافیت سـازوکار مالـی و پوشـش بیمـه‌ای ایـن خدمـات، وجـود نظـام مسـتقل مراقبـت تسـکینی کـودکان، وجـود راهنماهـای بالینی، مراقبـت مبتنی بر شـواهد و پژوهـش از الزامـات اصلـی اسـتقرار مراقبـت تسـکینی تلقـی می‌شـود، تمامـی مطالعـات انجـام شـده، توانمندسـازی ارائه‌دهنـدگان مراقبت به

ویـژه پرسـتاران و پزشـکان را در رأس کلیـه اقدامـات و الزامات قـرار داده و ارتقـای دانش، نگـرش و عملکرد آن‌هـا را کلید ارائه مراقبت‌های تسـکینی باکیفیـت تلقـی می‌کنند.

بـا عنایـت بـه ایـن کـه پژوهش‌هـای اخیـر در زمینـه ارزیابـی دانـش ارائه‌دهنـدگان مراقبـت در ایـران نیز مؤید نقـص دانـش در ارائه‌دهندگان مراقبـت و ضـرورت پرداختن بـه مبحث مراقبـت تسـکینی و گنجاندن آن در برنامه آموزشـی پرسـتاری و پزشـکی و برگـزاری دوره‌های آموزشـی برای آن‌ها بوده اسـت، یکی از اهداف دفتر ارتقای سـلامت و خدمات پرسـتاری معاونت پرسـتاری وزارت بهداشت، توانمندسازی پرسـتاران در زمینه ارائه مراقبت تسـکینی اسـت. در این راسـتا برگزاری کنگره کلینیـکال انکولوژی، فرصـت مناسـبی را در اختیـار قـرار می‌دهد تا ضمـن ارایه مباحـث مرتبط بـا ایـن موضـوع، بـر اهمیـت کار تیمـی بـه عنـوان یکـی از ارکان اساسـی مراقبت تسـکینی تاکیـد گردد. ضمن ابـراز قدردانـی از برگزارکننـدگان این کنگـره و تیـم علمـی و اجرایـی، امید اسـت تـا در آینـده‌ای نزدیك، شـاهد ارائـه مراقبت تسـکینی به عنوان بخشـی از خدمات قابل ارائه در پوشـش همگانی سـلامت بـه تمام مردم کشـورمان باشـیم.

دکتر مریم رسولی

مسئول کارگروه پرستاری

Scientific Committee of Clinical Oncology

Alphabetical

Dr. Abbasvandi, Fereshteh
Dr. Abrishami, Alireza
Dr. Adeli, Pourya
Dr. Aghili, Mahdi
Dr. Ahmadzadeh, Azar
Dr. Akbari, Mohammadreza
Dr. Akbari, Mohammad Esmaeil
Dr. Akhavan, Ali
Dr. Alavi, Maryam
Dr. Aledavood, Seyed Amir
Dr. Allahyari, Abolghasem
Dr. Almasi, Saeed
Dr. Ameri, Ahmad
Dr. Amooheidari, Alireza
Dr. Amoozegar Hashemi, Farnaz
Dr. Anbiaei, Robab
Dr. Anvari, Kazem
Dr. Arbabi, Farshid
Dr. Arefpoor, Amirmohammad
Dr. Asna Ashari, Omid
Dr. Bagheri, Ali
Dr. Basu, Partha
Dr. Bayani, Reyhaneh
Dr. Dehghan Menshadi, Hamidreza
Dr. Emadi Torghabeh, Ali
Dr. Fadavi, Pedram
Dr. Farazmand, Borna
Dr. Farhan, Farshid
Dr. Fayda, Merdan
Dr. Fazeli, Mohammad Sadegh
Dr. Fazlalizadeh, Abdollah
Dr. Foodazi, Hossein
Dr. Garousi, Maryam
Dr. Ghafoori, Mahyar
Dr. Ghalehtaki, Reza
Dr. Gharibvand, Mohammad Momen
Dr. Ghavamnasiri, Mohammadreza
Dr. Hassanzadeh, Elyas
Dr. Homaie, Fatemeh
Dr. Hosseini, Mohsen
Dr. Hosseini, Sareh
Dr. Hosseini, Sedigheh
Dr. Izadpanahi, Payam
Dr. Jackisch, Christian
Dr. Jafari, Fatemeh
Dr. Jafari, Mehrdad
Dr. Jafarian, Amirhossein
Dr. Javadinia, Alireza
Dr. Jazayeri, Seyed Nematollah
Dr. Kalantari, Mahmoodreza
Dr. Kazemian, Ali
Dr. Kianinia, Mahsa
Dr. Lesan, Mansour
Dr. Madani, Hossein
Dr. Mafi, Ahmadreza
Dr. Makhdoumi, Yasha
Dr. Malekzadeh, Mona
Dr. Mirzaei, Hamidreza
Dr. Mofid, Bahram
Dr. Moslemi, Dariush
Dr. Mousavi, Nima
Dr. Nazari, Leyla
Dr. Noferesti, Gholamhossein
Dr. Nourbakhsh, Forouzan
Dr. Pasdar, Alireza
Dr. Rasta, Sara
Dr. Razmjoo, Sasan
Dr. Rezaie, Alireza
Dr. Saeedi Saedi, Hamid
Dr. Saffar, Hana
Dr. Salahshoor, Faezeh
Dr. Salek, Roham
Dr. Samiee, Farhad
Dr. Samiee, Sara
Dr. Sanei, Mastaneh
Dr. Sarayi, Ehsan
Dr. Sasanpoor, Pegah
Dr. Seligmann, Jenny
Dr. Seyednejad, Farshad
Dr. Shafizad, Amin
Dr. Shahbazian, Hojatollah
Dr. Smyth, Elizabeth
Dr. Soltani, Ehsan
Dr. Soori, Tahereh
Dr. Tabarestani, Sanaz
Dr. Taghizadeh Hesari, Farzad
Dr. Taghizadeh, Ali
Dr. Yaghoobi Jooybari, Ali
Dr. Yamrali, Maisa
Dr. Yooseffam, Hossein
Dr. Zamani, Narges

Executive Committee of Clinical Oncology

Alphabetical

Dr. Bayani, Reyhaneh
Dr. Farazmand, Borna
Dr. Garousi, Maryam
Dr. Masoumi, Khatereh
Dr. Mousavi, Nima
Dr. Nourbakhsh, Forouzan
Dr. Rasta, Sara
Dr. Sarayi, Ehsan
Dr. Yamrali, Maisa
Zaeri, Golnaz
Zaeri, Mahnaz

Scientific Committee of Physics, Radiation Biology, and Radiation Technology

Alphabetical

Abbasi, Simin
Aghili, Mehdi
Alaei, Parham
Alinaghi Zadeh, Mohammad Reza
Alizadeh, Hamed
Almasrou, Hamzeh
Ameri, Ahmad
Arbabi, Farshid
Azma, Zohreh
Bahreyni Toossi, Mohammad Hossein
Bakhshandeh, Mohsen
Bakhtiari, Mohammad
Dadgar, Farid
Dayyani, Mahdieh
Fahimi, Fatemeh
Farazmand, Borna
Farmani, Mohammad Kazem
Fouladi-Nezhad, Behnaz
Gholam-Hosseinian, Hamid
Gholami, Hadi
Hafezi, Davood
Hashemi Malayeri, Bijan
Hashemi, Samaneh
Jabbari Arfaei, Ali
Jaberi, Ramin
Khodabakhshi, Reza
Mahdavi, Seyed Rabie
Mohammadi, Mohammad
Mofid, Bahram
Mosleh Shirazi, Mohammad Amin
Mozdarani, Hossein
Mousavi, Nima
Nabavi, Shahab
Nedaei, Hassan
Nickfarjam, Abolfazl
Parsai, Esmaeil
Rahimi, Aziz
Rajabi, Ali
Robat Jazi, Mostafa
Salek, Roham
Sedigh, Amir Houshang
Saedighi Pashaki, Abdolazim
Sepanlou, Nader
Shabestani Monfared, Ali
Shalchi, Keyvan

Scientific Committee of Oncology Nursing

Alphabetical

Dr. Abbaszadeh, Abbas
Dr. Ashrafzadeh, Hadis
Dr. Barasteh, Salman
Dr. Beiranvand, Samira
Dr. Ebadi, Abbas
Dr. Ebadinezhad, Zahra
Dr. Eshaghian, Azam
Dr. Eshghi, Peyman
Dr. Ghanbari Motlagh, Ali
Dr. Gharehdaghi, Farid
Dr. Gholizadeh, Adeleh
Dr. Karami, Maryam
Ms. Khademi, Fatemeh
Dr. Khanali Mojen, Leila
Dr. Mehrnoosh, Nasrin
Dr. Molaie Tavana, Parastoo
Dr. Pirjani, Pooneh
Dr. Rassouli, Maryam
Dr. Saeed, Yaser
Dr. Sedighi, Ladan
Dr. Shirinabadi Farahani, Azam

Executive Committee of Oncology Nursing

Alphabetical

Ms. Almasi Ghale, Elham
Mr. Fereidouni, Armin
Ms. Golmohammadi, Mobina
Ms. Hadavand Mirzaie, Somayeh
Ms. Jamshidi, Susan
Ms. Kazemzadeh, Zeynab
Mr. Mohammadi Roshan, Hosein
Dr. Pourazarhagh, Parand

Dr. Christian Jackisch
MD, PhD

Christian Jackisch, MD, PhD, was appointed in 2005 as Head of the Department of the Gynecology and Obstetrics at Academic Hospital "Sana Klinikum Offenbach" in Offenbach, Germany. At present, he is also serving as chair of the Breast Cancer Center and Gynecologic Cancer Center at Sana Klinikum Offenbach. He is a senior lecturer at the Phillips University of Marburg, Germany.
Prior to this, he served as faculty member and deputy director of the Department of Gynecology and Gynecologic Oncology and Endocrinology at the University Hospital in Marburg, Germany. After obtaining his MD and PhD degree in 1989 from the Medical School at University of Muenster in Germany, he specialized in obstetrics and gynecology at the University of Muenster (Germany). From 1994-1995 he served as a postdoctoral fellow at the Oncology Center of the John's Hopkins School of Medicine, Baltimore, Maryland, United States, under the supervision of Nancy Davidson MD, PhD. Professor Jackisch is a long-standing member of several national and international steering committees for breast and ovarian cancer trials, including the AGO OVAR Study Group, the HERA trial, and the ALTTO trial. In addition, he is a member of the German Task Force developing national guidelines for the diagnosis and treatment of breast cancer (AGO Guidelines for Breast Cancer: www.ago-online.org). He serves as president of the Cancer Society in Hesse, and has been appointed in this position to serve as a member of the board of directors in the German Cancer Society from 2012-2016 and 2020-2022
His main focus is clinical research in gynecology and gynecologic oncology, as well as breast cancer. In this context he is mainly focused on the endocrine regulation of breast cancer and the therapeutic impact of new treatment options. In recent years he focused on breast cancer prevention and screening programs. He has widely published in his field of expertise with more than 200 peer reviewed papers and is reviewer of various national and international journals.

Dr. Partha Basu
Head of Screening Group, Early Detection and Prevention Section, International Agency for Research on Cancer, World Health Organization

Dr Partha Basu is Head of Screening Group of International Agency for Research on Cancer (IARC). He was Head of Gynecological Oncology at Chittaranjan National Cancer Institute, India before joining IARC in 2015.
Dr Basu's current research projects include: a) cohort study to evaluate single dose of HPV vaccine; b) RCT to evaluate a new Indian HPV vaccine; c) evaluation of thermal ablation; d) evaluation of artificial intelligence based device for cervical cancer early detection; e) study of vaginal microbiome in HIV+ women; f) RCT to evaluate CBE; g) evaluation of automated breast ultrasound; h) evaluation of cancer screening programmes in Europe and Latin America; i) evaluation of colorectal cancer screening in Mediterranean Region. These projects are funded by National Institute of Health (USA), Gates Foundation, American Cancer Society, Norwegian Research Council, Swiss Cancer Research, Lalla Salma Foundation (Morocco), Indo-American Cancer Association etc.

Dr. Merdan Fayda
Radiation Oncologist, Liv hospital, Turkiye

He was born in 1976 in İstanbul. He graduated from Ahmet Simsek Science High School at 1993 and Istanbul University Faculty of Medicine in 1999. He completed residency training programme in Department of Radiation Oncology in 2004, and achieved his associate professorship in 2012, and his professorship in 2017. His main areas of interest are stereotactic radiotherapy, intensity modulated radiotherapy, image guided radiotherapy, 3D brachytherapy and 4D transrectal USG guided high dose rate prostate brachytherapy. Breast, gynecologic, urologic, head and neck and gynecologic cancers are the main research areas. He has worked as an assistant professor at Kocaeli University (2006-2009) and at Istanbul University Institute of Oncology (2009-2015). He is now working at Istinye University, Faculty of Medicine, Department of Radiation Oncology and also Liv Hospital Ulus, Department of Radiation Oncology as a full professor and chair of the department. He is member of Turkish Radiation Oncology Society, ASTRO, ESTRO and ASCO. He speaks English and Turkish

Dr. Jenny Seligmann

Medical Oncologist, University of Leeds

Current Position:

Professor of Gastrointestinal and Translational Cancer and Honorary Consultant in Medical Oncology (University of Leeds)
Clinical Director (GI Cancer) Leeds Clinical Trials Unit
GMC: 6115433

Qualifications:

2015 PhD (University of Leeds)
2008 MRCP (Edinburgh College)
2005 MB ChB (Aberdeen University)/ BScMedSci (Hons)

Clinical Trials Experience:

- UK Principal Investigator MK4280A
- Chief Investigator ARIEL Trial (NIHR EME; funded Oct 2020)
- Chief Investigator FOxTROT 2 and 3 (YCR; funded Dec 2020)
- Chief Investigator FOCUS 4-C (completed; 2017-2020)
- Study Co-ordinator EORTC 1560-GITCG (completed 2018-2021)
- Trial Management Group Membership (FOCUS 4, PICCOLO, LOTUS, FOxTROT)

Publications (5 year history)

- Cervantes A, Adam R,..Seligmann J. “Metastatic colorectal cancer: ESMO Clinical Practice Guideline for diagnosis, treatment and follow-up” Ann Oncol. Oct 22. DIO https://doi.org/10.1016/j.annonc.2022.10.003
- Hudson EM, Noutch S..SeligmannJ. “A phase II trial of Higher Radiotherapy Dose in the Eradication of early rectal cancer (APHRODITE):protocol for a muliticentre, open-label randomised controlled trial.” BMJ Open. 2022 Apr 28;12(4):e049119

- Brown LC, Graham J..Seligmann J. “Experiences of running a stratified medicine adaptive platform trial: Challenges and lessions learned from 10 years of the FOCUS4 trial in metastatic colorectal cancer” Clinical Trials. 2022 Apr;19(2):146-157
- Seligmann J., Fisher D, Brown L. “Inhibition of Wee1 is Effective in TP53 and RAS mutant Metastatic Colorectal Cancer: A randomized trial (FOCUS 4-C) Comparing Adavosertib (AZD1775) with Active Monitoring (AM). J Clin Oncol.2021.
- Adams R, Fisher D, Seligmann J., “Oral maintenance capecitabine versus active monitoring for patients with metastatic colorectal cancer (mCRC) who are stable or responding after 16 weeks of 1st line treatment: Results from the randomized FOCUS4-N trial” J Clin Oncol 2021. In press.
- Ten Hoorn S, Sommeijer DW…Seligmann J, “Molecular sub-type-specific efficacy of anti-EGFR therapy in colorectal cancer is dependent on the chemotherapy backbone” B J Cancer. 2021 doi: 10.1038/s41416-021-01477-9
- Williams C, Seligmann J, Elliott F, “Artificial intelligence-assisted amphiregulin and epiregulin immunohistochemistry predicts panitumumab benefit in RAS wild-type metastatic colorectal cancer”. Clin Can Res doi: 10.1158/1078-0432.
- Randon G, Yaeger R...Seligmann J, “EGFR Amplification in Metastatic Colorectal Cancer” JNCI https://doi.org/10.1093/jnci/djab069
- Taylor J, Swinson D, Seligmann J, “Addressing the variation in adjuvant chemotherapy treatment for colorectal cancer: Can a regional intervention promote national change? Int J Cancer 2021 15;148(4):845-856
- Seligmann J., Elliott F, et al Clinical and molecular characteristics and treatment outcomes of advanced right-colon, left-colon and rectal cancers: data from 1180 patients in a phase III trial of panitumumab with an extended biomarker panel” Ann Oncol 31(8).2020
- Seligmann J, Wright-Hughes A, Pottinger A, et al. “Lapatinib plus Capecitabine versus Trastuzumab plus Capecitabine in the Treatment of Human Epidermal Growth Factor Receptor 2-positive Metastatic Breast Cancer with Central Nervous System Metastases for Patients Currently or Previously Treated with Trastuzumab (LANTERN): a Phase II Randomised Trial”. Clin Oncol 2020 32(10):656-664
- Baaten I, West N..Seligmann J “Colorectal cancer peritoneal metastases: Biology, treatment and next steps” Eur J Surg Oncol. 46: 675-683 2020
- Taieb J, Jung A,..Seligmann J “The Evolving Biomarker Landscape for Treatment Selection in Metastatic Colorectal Cancer”. Drugs 79,1375-1394(2019)
- Harji D, Vallance A, Seligmann J et al, A systematic analysis highlighting deficiencies in reported outcomes for patients with stage IV colorectal cancer undergoing palliative resection of the primary tumour. Eur J Surg Oncol. Jun 2018. DOI:10.1016/j.ejso.2018.06.12
- Adams R, Brown E.. Seligmann J, et al. Inhibition of EGFR, HER2 and HER3 signalling in patients with colorectal cancer wild-type for BRAF, PIK3CA, KRAS and NRAS (FOCUS4-D): a phase 2-3 randomised trial. Lancet Gastroenterology and Hepatology. 15th Dec 2017. DOI https://doi.org/10.1016/S2468-1253(17)30394-1

- Seligmann J, Hatch A, Richman S, et al "Association of tumor HER3 messenger RNA expression with panitumumab efficacy in advanced colorectal cancer". JAMA Oncol, 2017. Doi;10.1001/jamaoncol.2017.3168
- Seligmann J, Seymour M. "Use of gene expression profiles to distinguish molecular sub-types in colorectal cancer- progression towards primetime" 2017 Journal of the National Cancer Institute;109(7): djx019
- Seligmann J, Fisher D, Richman S, et al "Investigating the poor outcomes of BRAF-mutant advanced colorectal cancer: analysis from 2530 patients in randomised clinical trials" 2016 Annals of Oncology. 28(3); 562-568
- Seligmann J, Elliott F, Richman S, et al "Combined epiregulin and amphiregulin expression as a biomarker of prognosis and panitumumab benefit in advanced colorectal cancer" .2016 JAMA Oncology 2(5):633-52

Committee Membership and Other Activity

- European Society of Medical Oncologists: Lower GI Faculty/ ESMO Clinical Guideline Committee/ ESMO PRO (Continuing Education)/ ESMO Congress 2024 Lower GI Track Chair
- UK National Cancer Research Institute Colorectal Cancer Clinical Studies Group - adjuvant and advanced sub-group and surgical sub-group member.
- EORTC GI Group member
- Association of Coloproctologists of Great Britain – oncology representative
- GI Connect - group member and contributor

Dr. Elizabeth Smyth
Medical Oncologist, Cambridge University

Elizabeth (Lizzy) Smyth is a consultant in gastrointestinal oncology at Addenbrooke's Hospital in Cambridge. Dr Smyth commenced her oncology training in Dublin, Ireland. In 2009 she was awarded an Irish Society of Medical Oncology fellowship to train at Memorial Sloan-Kettering Centre, New York. Following this she worked at the Royal Marsden Hospital in London from 2011-2018. Her research focus is on clinical trials and translational research in gastroesophageal cancer and she has worked on trial design and management of national and international trials. She is a member of the European Society of Medical Oncology Faculty GI educational faculty and leads the EORTC GI Trials Group Gastric Cancer Taskforce. Dr Smyth is committed to furthering national and international collaboration in GI trials research.

دکتر ثریا سلمانیان

دکتر ثریا سلمانیان مقطع پزشکی عمومی و تخصص رادیوتراپی-انکولوژی خود را در دانشگاه علوم پزشکی شهید بهشتی گذراندند. ایشان نخستین بانوی فارغ‌التحصیل از رشته‌ی رادیوتراپی-انکولوژی ایران هستند.

دکتر سلمانیان در سال ۱۳۷۳ به عنوان هیأت علمی در دانشگاه علوم پزشکی ایران مشغول به کار شدند.

ایشان دوره‌های IMRT وSRT را در رویال مارزدن لندن گذرانده‌اند.

همچنین در دوره‌های طب تسکینی از لوند سوئد و دوره لیزر درمانی، دوره‌های Leadership، MBA و Coaching نیز شرکت داشته‌اند.

علاوه بر فعالیت‌های درمانی در راستای بیماران سرطانی، از ایشان مقالات متعددی در مجلات معتبر داخلی و خارجی چاپ شده‌است.

دکتر فرناز آموزگار هاشمی

دکتر فرناز آموزگار هاشمی، اولین بانوی استاد تمام رشته‌ی رادیوتراپی-انکولوژی، فارغ التحصیل سال ۱۳۶۹ از دانشگاه علوم پزشکی تهران بوده که در سال ۱۳۷۳ وارد مقطع تخصص رادیوتراپی-انکولوژی در دانشگاه تهران شدند.

سال ۱۳۷۶ با کسب رتبه‌ی دوم بورد کشوری در انستیتو کانسر مجتمع بیمارستانی امام خمینی به عنوان استادیار مشغول به کار شدند. در دوران فعالیت خود به عنوان هیأت علمی در چندین طرح بین المللی از جمله طرح ABC و طرح ATLAS (هسته مرکزی هر دو طرح انگلستان) شرکت داشتند.

ایشان همچنین چندین فرصت مطالعاتی در مراکز مختلف از جمله UCLA، رویال مارزدن، مرکز سرطان ونکوور و جانز هاپکینز گذرانده‌اند. از اواسط دوران کاری روی سرطان‌های ژنیکولوژی و پستان متمرکز شده و سال‌ها عضو IGCS بوده‌اند. ایشان در پروژه توسعه براکی‌تراپی در ایران که توسط آژانس بین‌المللی انرژی اتمی تعریف شده بود شرکت داشته‌اند. پس از گذراندن دوره‌ی براکی تراپی سرطان‌های زنان در بیمارستان TATA Memorial در بمبئی به آموزش این روش درمانی به دانشجویان مقطع تخصص پرداختند.

ایشان در طی سال‌های فعالیت علمی خود، مقالات متعددی در مجلات معتبر در زمینه‌ی درمان بیماران سرطانی به چاپ رسانده‌اند و در حال حاضر در بخش رادیوانکولوژی انستیتوکانسر مشغول به ارائه‌ی خدمات درمانی به بیماران و آموزش به دانشجویان مقطع تخصص هستند.

دکتر سیمین همتی

دکتر سیمین همتی متولد کرمانشاه، دوران تحصیلی پزشکی عمومی را در دانشکده‌ی پزشکی دانشگاه اصفهان و دوره‌ی تخصصی رادیوتراپی-انکولوژی را در دانشگاه های علوم پزشکی اصفهان و تهران سپری کردند. ایشان بعد از فارغ التحصیلی دوره‌های آموزشی براکی‌تراپی، IMRT وSBRT را نیز گذرانده‌اند.

دکتر همتی اولین بانویی هستند که به عضویت هیات ممتحنه بورد کشوری و هیات مدیره‌ی انجمن رادیواتراپی-انکولوژی ایران درآمده‌اند. چاپ بیش از یکصد مقاله در ژورنال های معتبر داخلی و خارجی، مشارکت در تالیف کتب تخصصی، انجام بیش از سی مورد پروژه‌های تحقیقاتی در زمینه‌ی کانسر و ارائه سخنرانی‌های متعدد در کنفرانس های علمی از افتخارات ایشان است.

دکتر همتی عضو جمعیت هلال احمر ایران و از موسسین خیریه‌ی نور محیی در استان اصفهان هستند که حامی بیماران بزرگسال مبتلا به کانسر می‌باشد و تاکنون ریاست آن را عهده‌دار بوده‌اند .

ایشان علاوه بر درمان، تدریس و پژوهش، مسئولیت‌های اجرایی هم داشته‌اند و چندین سال مدیر گروه و مشاور معاونت پژوهشی دانشکده و رییس بخش رادیوتراپی-انکولوژی بیمارستان سیدالشهدای اصفهان بوده‌اند.

دکتر همتی در حال حاضر در دانشگاه علوم پزشکی اصفهان مشغول ارائه‌ی خدمات آموزشی و درمانی می‌باشند.

دکتر میترا قالیبافیان

دکتر میترا قالیبافیان دوران تحصیل پزشکی عمومی خود را در دانشگاه ایران گذرانده و پس از آن در سال ۱۳۷۶ وارد دوره‌ی تخصص در انستیتو کانسر دانشگاه تهران شدند و با کسب رتبه‌ی اول بورد تخصصی از این دانشگاه فارغ‌التحصیل شدند.

ایشان پس از طی دوره‌ی فلوشیب رادیوانکولوژی کودکان درکشور فرانسه در سالهای ۱۳۸۳ تا ۱۳۸۵، در بیمارستان فوق‌تخصصی سرطان کودکان محک مشغول به کار شدند.

همچنین در سال ۱۳۹۹ دوره‌ی نوروانکولوژی کودکان در کانادا را نیز گذرانده‌اند.

دکتر قالیبافیان از سال ۱۳۸۵ تاکنون در مرکز درمانی محک مشغول به ارائه‌ی خدمت به بیماران بوده و در طی این سال‌ها حامی کودکان نیازمند درمان در بیمارستان محک بوده و جایگاه ارزشمندی در ارتقای سطح درمان کودکان مبتلا به سرطان دارند.

دکتر سودابه شهید ثالث

دکتر سودابه شهید ثالث، متولد مشهد، دوره‌ی پزشکی عمومی خود را در دانشگاه علوم پزشکی مشهد گذرانده و سپس در همان دانشگاه وارد رشته‌ی تخصصی رادیوتراپی-انکولوژی شدند.

پس از فارغ‌التحصیلی دوره‌های تکمیلی پروتون‌تراپی و IORT را در ایتالیا به اتمام رساندند.

ایشان سال ۱۳۹۰ به عضویت هیأت علمی دانشگاه علوم پزشکی مشهد درآمدند و از سال ۱۳۹۴ تاکنون رئیس مرکز تحقیقات سرطان دانشگاه علوم پزشکی مشهد می‌باشند. در کارنامه‌ی ایشان ترجمه و تالیف شش کتاب و بیش از صد مقاله در مجلات معتبر و عنوان پژوهشگر برتر سال‌های ۱۳۹۶ و ۱۳۹۸ به چشم می‌خورد.

دکتر شهید ثالث در سال ۱۴۰۱ به مرتبه‌ی استادی ارتقا یافتند و در حال حاضر علاوه بر فعالیت‌های آموزشی و پژوهشی، در مقام ریاست بیمارستان امید مشهد در حال ارائه‌ی خدمات بهداشتی-درمانی می‌باشند.

Program of

The 7th International Clinical Oncology Congress

The 17th Iranian Annual Clinical Oncology Congress

ISRO
Iranian Society of Radiation Oncology

ISCO-ESMO Joint Session
ESMO

Clinical Oncology Program

Thursday 2nd February, 2023 — Main (International) Hall

Session One: 08:15 - 10:30

Chairpersons:

- Dr. Hossein Foodazi (Radio-Oncologist)
- Dr. Mohammadreza Ghavamnasiri (Radio-Oncologist)
- Dr. Hossein Madani (Radio-Oncologist)

08:15 - 08:35	**RT in Hodgkin Lymphoma: When Adding RT Does not Provide A Benefit?** • Dr. Mahsa Kianinia (Radio-Oncologist)
08:40 - 09:00	**Radical RT in Lung Cancer** • Dr. Reza Ghalehtaki (Radio-Oncologist)
09:05 - 09:25	**Fractionation in Early Breast Cancer Radiotherapy** • Dr. Alireza Javadinia (Radio-Oncologist)
09:30 - 09:50	**Evidence-based Practice in ER+ Her2- Metastatic Breast Cancer** • Dr. Fatemeh Homaie (Radio-Oncologist)
09:50 - 10:30	**Opening Ceremony** • Dr. Yasha Makhdoumi (President of ISCO, Radio-Oncologist) • Dr. Roham Salek (Scientific chairperson, Radio-Oncologist)
10:30 - 11:00	Coffee Break

Thursday 2nd February, 2023 — Main (International) Hall

Session Two: 11:00 - 13:00 / Breast Cancer

Chairpersons:

- Dr. Farnaz Amoozegar Hashemi (Radio-Oncologist)
- Dr. Amirmohammad Arefpour (Radio-Oncologist)

11:00 - 11:35	**Breast Cancer Early Detection, From the Perspective of Global Breast Cancer Initiative** • Dr. Partha Basu (WHO-IARC)
11:40 - 13:00	**Panel: Treatment of Young Women with Breast Cancer** **Moderator:** • Dr. Hamidreza Mirzaie (Radio-Oncologist) **Panel Members:** • Dr. Fereshteh Abbasvandi (Surgeon) • Dr. Mohammad-Esmaeil Akbari (Oncosurgeon) • Dr. Mohammadreza Akbari (Geneticist) • Dr. Mohsen Hosseini (Radio-Oncologist) • Dr. Alireza Pasdar (Geneticist) • Dr. Sedigheh Hosseini (Infertility Fellow) • Dr. Leyla Nazari (Infertility Fellow) • Dr. Farzad Taghizadeh Hesari (Radio-Oncologist) • Dr. Pegah Sasanpoor (Radio-Oncologist) • Dr. Sanaz Tabarestani (Geneticist)
13:00 - 14:00	**Lunch**

Thursday 2nd February, 2023 Main (International) Hall

Session Three: 14:00 - 16:20 / H&N and Sarcoma

Chairpersons:

- Dr. Saeed Almasi (Radio-Oncologist)
- Dr. Ahmad Ameri (Radio-Oncologist)

14:00 - 14:20	**Novel Treatments in Soft Tissue Sarcoma** • Dr. Dariush Moslemi (Radio-Oncologist)
14:25 - 14:45	**First Line Treatment of Recurrent/Metastatic Head and Neck Cancer** • Dr. Mansour Lesan (Radio-Oncologist)
14:50 - 16:20	**Panel: Management of HPV+ Head and Neck Cancer** Moderator: • Dr. Farshid Farhan (Radio-Oncologist) Panel Members: • Dr. Fatemeh Jafari (Radio-Oncologist) • Dr. Mehrdad Jafari (ENT Specialist) • Dr. Ali Kazemian (Radio-Oncologist) • Dr. Hana Saffar (Pathologist) • Dr. Tahereh Soori (Infectious diseases)
17:00 - 19:00	**ISRO Annual Meeting**

Clinical Oncology Program

Friday 3rd February, 2023 **Main (International) Hall**

Session One: 08:15 - 10:20 / Upper GI Cancer

Chairpersons:

- Dr. Hamidreza Dehghan Manshadi (Radio-Oncologist)
- Dr. Gholamhossein Noferesti (Radio-Oncologist)

08:15 - 08:35	**Impact of Dose Escalation in Esophageal Cancer** • Dr. Ali Bagheri (Radio-Oncologist)
08:40 - 09:00	**Preoperative Chemoradiation in Locally Advanced Pancreatic Cancer** • Dr. Ali Taghizadeh (Radio-Oncologist)
09:05 - 10:20	**Panel: Best Treatment Approach in Resectable Gastric Cancer** **Moderator:** • Dr. Seyed Amir Aledavood (Radio-Oncologist) **Panel Members:** • Dr. Alireza Abrishami (Radiologist) • Dr. Ali Emadi Torghabeh (Radio-Oncologist) • Dr. Amirhossein Jafarian (Pathologist) • Dr. Hamid Saeedi Saedi (Radio-Oncologist) • Dr. Ehsan Soltani (Oncosurgeon)
10:20 - 11:00	Coffee Break

Friday 3rd February, 2023 — Main (International) Hall

Session Two: 11:00 - 13:00

Chairpersons:

- Dr. Abdollah Fazlalizadeh (Radio-Oncologist)
- Dr. Ahmadreza Mafi (Radio-Oncologist)
- Dr. Sara Samiee (Radio-Oncologist)

11:00 - 11:30	**ESMO Joint Session: Adjuvant and Neoadjuvant Chemotherapy in Gastric Cancer** • Dr. Elizabeth Smyth (Medical Oncologist, Cambridge University)
11:35 - 12:05	**The Preferred Approach for Systemic Treatment of HER-2 Positive Early-stage Breast Cancer** • Dr. Christian Jackisch (GYN oncologist, Germany)
12:10 - 12:30	**Hypofractionated RT, Where Do We Stand?** • Dr. Borna Farazmand (Radio-Oncologist)
12:30 - 13:00	**ESMO Joint Session: Treatment Algorithm after Second-line Chemotherapy in Metastatic Colorectal Cancer Disease** • Dr. Jenny Seligmann (Medical Oncologist, University of Leeds)
13:00 - 14:00	Lunch

Friday 3rd February, 2023 **Main (International) Hall**

Session Three: 14:00 - 16:30

Chairpersons:

- Dr. Bahram Mofid (Radio-Oncologist)
- Dr. Farhad Samiee (Radio-Oncologist)

14:00 - 14:20 **Management of Advanced Renal Cell Carcinoma**

- Dr. Maryam Alavi (Radio-Oncologist)

14:25 - 14:55 **New Paradigm for Precision Adaptive Radiotherapy**

- Dr. Merdan Fayda (Radio-Oncologist, Liv Hospital, Turkiye)

15:00 - 16:30 **Panel: Management of Locally Advanced Prostate Cancer**

Moderator:

- Dr. Ali Akhavan (Radio-Oncologist)

Panel Members:

- Dr. Alireza Amooheidari (Radio-Oncologist)
- Dr. Mahyar Ghafoori (Radiologist)
- Dr. Elyas Hassanzadeh (Radio-Oncologist)
- Dr. Mohammad Hossein Izadpanahi (Uro-Oncologist)
- Dr. Mahmoodreza Kalantari (Pathologist)
- Dr. Alireza Rezaie (Nuclear Medicine Specialist)

Clinical Oncology Program

Saturday 4th February, 2023 — Main (International) Hall

Session One: 08:15 - 10:45

Chairpersons:

- Dr. Kazem Anvari
- Dr. Mastaneh Sanei

08:15 - 08:35	**SBRT for Metastatic Prostate Cancer: Indication and Contouring Tips** • Dr. Mona Malekzadeh (Radio-Oncologist)
08:40 - 09:00	**Systemic Treatment as First Option in Brain Metastases?** • Dr. Farshid Arbabi (Radio-Oncologist)
09:05 - 09:25	**Management of HER2+ Breast Cancer with Brain Metastases** • Dr. Robab Anbiaei (Radio-Oncologist)
09:30 - 10:45	**Panel: Uterine Cancer not Suitable for Primary Resection** **Moderator:** • Dr. Hojatollah Shahbazian (Radio-Oncologist) **Panel Members:** • Dr. Azar Ahmadzadeh (GYN oncologist) • Dr. Mohammad Momen Gharibvand (Radiologist) • Dr. Sareh Hosseini (Radio-Oncologist) • Dr. Seyed Nematollah Jazayeri (Pathologist) • Dr. Sasan Razmjoo (Radio-Oncologist) • Dr. Narges Zamani (GYN oncologist)
10:45 - 11:15	**Coffee Break**

Saturday 4th February, 2023 — Main (International) Hall

Session Two: 11:15 - 13:00 / Lower GI

Chairpersons:

- Dr. Pourya Adeli (Radio-Oncologist)
- Dr. Omid Asna Ashari (Radio-Oncologist)

11:15 - 11:35	**Adjuvant Therapy with Oxaliplatin in Stage II Colon Cancer** • Dr. Ali Yaghoobi Jooybari (Radio-Oncologist)
11:40 - 13:00	**Panel: TNT of Rectal Cancer: Best Sequence of Treatment, Enhancing Complete Response** **Moderator:** • Dr. Pedram Fadavi (Radio-Oncologist) **Panel Members:** • Dr. Mahdi Aghili (Radio-Oncologist) • Dr. Abolghasem Allahyari (Hemato-Oncologist) • Dr. Mohammad Sadegh Fazeli (Colorectal Surgeon) • Dr. Faezeh Salahshoor (Radiologist) • Dr. Amin Shafizad (Radio-Oncologist) • Dr. Hossein Yooseffam (Colorectal Surgeon)
13:00 - 13:45	**Closing ceremony**
13:45 - 14:45	Lunch

Oncology Nursing Program

Thursday 2nd February, 2023 — Tooska Hall

Session One: 08:15 - 10:30

08:15 - 08:30	**Opening Ceremony**
08:30 - 08:45	**Report of Nursing Section of the Congress** • Zeinab Kazemzadeh
08:45 - 09:00	**Explanation of the Goals** • Dr. Maryam Rassouli
09:00 - 09:20	**Plans Of Deputy Of Nursing In The Field Of Cancer Management** • Somayeh Mirzaei
09:20 - 10:00	**Models of Palliative Care** • Dr. Azam Shirinabadi Farahani
10:00 - 10:30	**Home Care in Cancer Management** • Dr. Yasha Makhdoumi (President of ISCO, Radio-Oncologist) • Dr. Roham Salek (Scientific Chairperson, Radio-Oncologist)
10:30 - 11:00	**Coffee Break**

Session Two: 11:00 - 13:00

11:00 - 11:35	**Panel 1: Establishment Of Palliative Care Clinic In Children With Cancer: Lesson Learned** • Dr. Leila Khanali • Dr. Peyman Eshghi
13:00 - 14:00	**Pray and Lunch**

Thursday 2nd February, 2023 — Tooska Hall

Session Three: 14:00 - 16:00

14:00 - 14:20	**Necessity of Providing Palliative Care** • Dr. Maryam Rassouli
14:20 - 16:00	**Panel 2: Pain Management in Cancer**
	Ongoing Plans of Nursing Deputy in the Field of Palliative Care • Dr. Nasrin Mehrnoosh
	Pain Assessment Tools • Dr. Laden Sedighi
	Physiology of Pain • Dr. Farid Abolhasan Ghare Daghi
	Pharmacological Intervention in Pain Management • Dr. Yasser Saeed

Oncology Nursing Program

Friday 3rd February, 2023 — Tooska Hall

Session One: 08:15 - 10:30

08:15 - 08:45	**Presenting a Report of The Previous Day's Topics and Upcoming Programs** • Zeinab Kazemzadeh
08:45 - 10:30	**Panel 1: Symptom Management in Cancer Patients**
	Dyspnea • Dr. Samira Beiranvand
	Gastro-Intestinal Symptoms • Dr. Leila Khanali
	Fatigue • Dr. Pooneh Pirjani
10:30 - 11:00	Coffee Break

Session Two: 11:00 - 13:00

11:00 - 12:30	**Panel 2: Symptom Management in Cancer Patients**
	Anorexia • Dr. Zahra Ebadinejad
	Sleep Disorders • Dr. Adeleh Gholizadeh
	Anxiety and Depression • Dr. Parand Pourazer
	Delirium • Dr. Salman Barasteh

Friday 3rd February, 2023 — Tooska Hall

12:30 - 13:00	**Breaking Bad News** • Dr. Adeleh Gholizadeh
13:00 - 14:00	Pray and Lunch

Session Three: 14:00 - 16:00

14:00 - 14:30	**Management of Complications of Chemotherapy** • Dr. Maryam Karami
14:30 - 16:00	**Panel3: Patient's Preferences of Patients with Cancer at the End of Life**
	Patients Experience at the End of Life • Dr. Salman Barasteh
	Ethical Considerations in DNR • Dr. Azam Eshaghian
	Quality of Death Assessment Tools • Dr. Hadis Ashrafizadeh
	Preferred Place of Death • Armin Fereidouni
	Good Death From Perspectives of Patients Family Members • Hossein Mohammadi Roshan
	Advanced Care Planning • Mobina GolMohammadi

Physics, Radiation Biology, and Radiation Technology Program

Thursday 2nd February, 2023 **Hegmataneh Hall**

Session One: 08:15 - 10:30 / Treatment Planning in Radiation Therapy

Chairperson:

- Dr. Abolfazl Nickfarjam (Medical Physicist)

08:15 - 08:45	**Treatment Planning Systems Overview** • Dr. Abolfazl Nickfarjam (Medical Physicist)
08:45 - 09:15	**Machine Learning for Automated Radiation Therapy Treatment Planning: Theory and Applications** • Dr. Shahab Nabavi (Computer Scientist)
09:15 - 09:30	**Estimation of Dose Distribution in Breast Cancer Patients Using Deep Learning Technique** • Mohammad Ehsan Ravari
09:30 - 09:45	**Calculation of Photon and Neutron's Organ Dose Distribution (infield, outfield) in Breast Cancer Radiation Therapy for Rando Phantom with Monte Carlo Code (Gate)** • Dr. Marziyeh Behmadi
09:45 - 10:00	**Prediction of Acute Skin Toxicity in Tomotherapy of Breast Cancer Using Skin DVH** • Pegah Saadatmand
10:00 - 10:30	**Panel: Planning Maintenance and QA Tasks** Moderator: • Dr. Abolfazl Nickfarjam (Medical Physicist) Panel Members: • Dr. Ahmad Ameri (Radio-Oncologist) • Dr. Shahab Nabavi (Computer Scientist) • Dr. Mostafa Robatjazi (Medical Physicist)
10:30 - 11:00	**Coffee Break**

Thursday 2nd February, 2023 — Hegmataneh Hall

Session Two: 11:00 - 13:00 / Training, Education and Documentation for Radiation Oncology Disciplines

Chairpersons:

- Dr. Mohsen Bakhshandeh (Medical Physicist)
- Dr. Bijan Hashemi Malayeri (Medical Physicist)

11:00 - 11:30	**Overview of Academic Education of Medical Physics in Iran** • Dr. Bijan Hashemi Malayeri (Medical Physicist)
11:30 - 12:00	**Establishing a Protocolized Radiation Oncology Department** • Mr. Hamzeh Almasrou (Radiation Therapist)
12:00 - 12:20	**Radiation Oncology Physics Education (ROPE): a Virtual Training Plan** • Dr. Mohammad Mohammadi (Medical Physicist)
12:20 - 12:40	**Patient Training in Radiation Therapy** • Mr. Mohammad Kazem Farmani (Radiation Therapist)
12:40 - 13:00	**Panel: Protocolization in Radiotherapy** Moderators: • Dr. Mohsen Bakhshandeh (Medical Physicist) • Dr. Bijan Hashemi Malayeri (Medical Physicist) Panel Members: • Mr. Davoud Hafezi (Radiation Therapist) • Dr. Bahram Mofid (Radio-Oncologist)
13:00 - 14:00	**Lunch**

Thursday 2nd February, 2023 — Hegmataneh Hall

Session Three: 14:00 - 16:30 / Brachytherapy and Radiation Biology

Chairpersons:

- Dr. Hossein Mozdarani (Genetics Scientist)
- Dr. Ramin Jaberi (Medical Physicist)

14:00 - 14:30	**Radiobiology of Brachytherapy** • Dr. Ramin Jaberi (Medical Physicist)
14:30 - 15:00	**High Dose rate Prostate Brachy** • Dr. Ramin Jaberi (Medical Physicist)
15:00 - 15:15	**Low Dose Rate Prostate Brachy** • Dr. Mohammad Mohammadi (Medical Physicist)
15:15 - 15:30	**A Novel Approach Toward Radio-Sensitization Agents in 106Ru Ophthalmic Brachytherapy** • Dr. Samaneh Hashemi (Medical Physicist)
15:30 - 15:45	**Evaluation of the Dose Fractionation Schedules in the Treatment of Non-melanoma Skin Cancer in the Surface High Dose Rate Brachytherapy Technique Using the Concept of EUBED** • Arezo Karimi
15:45 - 16:00	**Radio-sensitization Properties of Metallic Nanoparticles in Brachytherapy of Uterus Cancer by High Dose Rate Ir-192 Seed: A Simulation Study by MCNPX and MCNP6 Codes** • Elham Mansouri
16:00 - 16:30	**Panel: Brachytherapy Versus Advanced External Beam Radiotherapy** **Moderator:** • Dr. Hossein Mozdarani (Genetics Scientist) • Dr. Ramin Jaberi (Medical Physicist) **Panel Members:** • Dr. Mehdi Aghili (Radio-Oncologist) • Dr. Hadi Gholami Medical Physicist)

Physics, Radiation Biology, and Radiation Technology Program

Friday 3rd February, 2023 **Hegmataneh Hall**

Session One: 08:00 - 10:30 / External Radiation Delivery techniques and Radiation Biology

Chairpersons:

- Dr. S. Rabie Mahdavi (Medical Physicist)
- Dr. Hossein Mozdarani (Genetics Scientist)

08:00 - 08:30	**Radiobiology of EBRT** • Dr. Hossein Mozdarani (Genetics Scientist)
08:30 - 09:00	**Role of Radiation Technologists in Advanced Radiation Delivery Technique** • Dr. Mahdieh Dayyani (Radio-Oncologist)
09:00 - 09:30	**Physics of MR-LINAC in Prostate Cancer** • Dr. S. Rabi Mahdavi (Medical Physicist)
09:30 - 09:45	**Investigation of Biological Damage Caused by Hyperthermia Induced by Multiferroic Nanostructures on DU-145 Human Prostate Cancer Cells** • Dr. Soheil Elmtalab
09:45 - 10:00	**Comparison of the Heart and LAD Doses in Radiation to Left Breast Cancer With and Without DIBH Technique** • Mohsen Saeb
10:00 - 10:30	**Panel: A Quality Assurance Plan for Advanced Radiotherapy Techniques** Moderators: • Dr. Seyed Rabie Mahdavi (Medical Physicist) • Dr. Hossein Mozdarani (Genetics Scientist) Panel Members: • Dr. Dr. Mahdieh Dayyani (Radio-Oncologist) • Dr. Hassan Nedaei (Medical Physicist) • Mr. Amir Houshang Sedigh (Radiation Therapist)

Friday 3rd February, 2023 — Hegmataneh Hall

10:30 - 11:00 Coffee Break

Session Two: 11:00 - 13:00 / Imaging in Radiation Therapy

Chairperson:
- Dr. Mohammad Amin Mosleh Shirazi (Medical Physicist)

11:00 - 11:30 **Image Guidance in Radiation Therapy: Current Practice and Recent Advances**
- Parham Alaee

11:30 - 12:00 **Deformable Image Registration**
- Reza Alinaghizadeh

12:00 - 12:30 **Cone Beam CT Image Registration During Radiotherapy**
- Fatemeh Fahimi

12:30 - 12:45 **Machine Learning Methods for Rapid and Accurate Staging of Breast Cancer based on Mammograms**
- Elahe Tarighati

12:45 - 13:00 **Panel: Possibility of Advanced Radiotherapy delivery without KV imager**

Moderator:
- Dr. Mohammad Amin Mosleh (Medical Physicist)

Panel Members:
- Mrs. Simin Abbasi (Radiation Therapist)
- Dr. Farshid Arbabi (Radio-Oncologist)
- Dr. Aziz Rahimi (Medical Physicist)

Friday 3rd February, 2023 — Hegmataneh Hall

13:00 - 14:00 Lunch

Session Three: 14:00 - 16:30 / Radiation Safety and Quality Management in Radiation Oncology

Chairperson:

- Dr. Ali Shabastani Monfared (Medical Physicist)

14:00 - 14:30 **Quality Management in a Radiotherapy Department**

- Dr. Mohammad Bakhtiari (Medical Physicist)

14:30 - 15:00 **Overview of Radiation Safety Regulations Applied in Radiation Oncology**

- Mr. Ali Rajabi (Medical Physicist)

15:00 - 15:20 **The Necessity of Standard Air Condition in Radiotherapy Bunkers**

- Nader Sepanlou (Radiation Therapist)

15:20 - 16:30 **Panel: Impact of Error Analysis on the Quality of Radiotherapy**

Moderator:

- Dr. Ali Shabestani Monfared (Medical Physicist)

Panel Members:

- Mr. Hamed Alizadeh (Medical Physicist)
- Mr. Ali Rajabi (Medical Physicist)
- Mr. Amir Houshang Sedigh (Radiation Therapist)

Name	Hall	Day	Time
A			
Abbasi Simin			
	Hegmataneh	Day 2	12:45
Abbasvandi Fereshteh			
	Main	Day 1	11:40
Abolhasan Ghare Daghi Farid			
	Tooska	Day 1	14:20
Abrishami Alireza			
	Main	Day 2	09:05
Adeli Pourya			
	Main	Day 3	11:15
Aghili Mahdi			
	Hegmataneh	Day 1	16:00
	Main	Day 3	11:40
Ahmadzadeh Azar			
	Main	Day 3	09:30
Akbari Mohammad-Esmaeil			
	Main	Day 1	11:40
Akbari Mohammadreza			
	Main	Day 1	11:40
Akhavan Ali			
	Main	Day 2	15:00
Alaee Parham			
	Hegmataneh	Day 2	11:00
Alavi Maryam			
	Main	Day 2	14:00
Aledavood Seyed Amir			
	Main	Day 2	09:05
Alinaghizadeh Reza			
	Hegmataneh	Day 2	11:30
Alizadeh Hamed			
	Hegmataneh	Day 2	15:20
Allahyari Abolghasem			
	Main	Day 3	11:40
Almasi Saeed			
	Main	Day 1	14:00
Almasrou Hamzeh			
	Hegmataneh	Day 1	11:30
Ameri Ahmad			
	Hegmataneh	Day 1	10:00
	Main	Day 1	14:00
Amooheidari Alireza			
	Main	Day 2	15:00
Amoozegar Hashemi Farnaz			
	Main	Day 1	11:00
Anbiaei Robab			
	Main	Day 3	09:05
Anvari Kazem			
	Main	Day 3	08:15
Arbabi Farshid			
	Hegmataneh	Day 2	12:45
	Main	Day 3	08:40
Arefpour Amirmohammad			
	Main	Day 1	11:00
Ashrafizadeh Hadis			
	Tooska	Day 2	14:30
Asna Ashari Omid			
	Main	Day 3	11:15
B			
Bagheri Ali			
	Main	Day 2	08:15
Bakhshandeh Mohsen			
	Hegmataneh	Day 1	11:00
	Hegmataneh	Day 1	12:40
Bakhtiari Mohammad			
	Hegmataneh	Day 2	14:00
Barasteh Salman			
	Tooska	Day 2	11:00
	Tooska	Day 2	14:30
Basu Partha			
	Main	Day 1	11:00

Name	Hall	Day	Time
Behmadi Marziyeh	Hegmataneh	Day 1	09:30
Beiranvand Samira	Tooska	Day 2	08:45
D			
Dayyani Mahdieh	Hegmataneh	Day 2	08:30
	Hegmataneh	Day 2	10:00
Dehghan Manshadi Hamidreza	Main	Day 2	08:15
E			
Ebadinejad Zahra	Tooska	Day 2	11:00
Elmtalab Soheil	Hegmataneh	Day 2	09:30
Emadi Torghabeh Ali	Main	Day 2	09:05
Eshaghian Azam	Tooska	Day 2	14:30
Eshghi Peyman	Tooska	Day 1	11:00
F			
Fadavi Pedram	Main	Day 3	11:40
Fahimi Fatemeh	Hegmataneh	Day 2	12:00
Farazmand Borna	Main	Day 2	12:10
Farhan Farshid	Main	Day 1	14:50
Farmani Mohammad Kazem	Hegmataneh	Day 1	12:20
Fayda Merdan	Main	Day 2	14:25
Fazeli Mohammad Sadegh	Main	Day 3	11:40
Fazlalizadeh Abdollah	Main	Day 2	11:00
Fereidouni Armin	Tooska	Day 2	14:30
Foodazi Hossein	Main	Day 1	08:15
G			
Ghafoori Mahyar	Main	Day 2	15:00
Ghalehtaki Reza	Main	Day 1	08:40
Gharibvand Mohammad Momen	Main	Day 3	09:30
Ghavamnasiri Mohammadreza	Main	Day 1	08:15
Gholami Hadi	Hegmataneh	Day 1	16:00
Gholizadeh Adeleh	Tooska	Day 2	11:00
	Tooska	Day 2	12:30
GolMohammadi Mobina	Tooska	Day 2	14:30
H			
Hafezi Davoud	Hegmataneh	Day 1	12:40
Hashemi Malayeri Bijan	Hegmataneh	Day 1	11:00
	Hegmataneh	Day 1	12:40

Name	Hall	Day	Time
Hashemi Samaneh			
	Hegmataneh	Day 1	15:15
Hassanzadeh Elyas			
	Main	Day 2	15:00
Homaie Fatemeh			
	Main	Day 1	09:30
Hosseini Mohsen			
	Main	Day 1	11:40
Hosseini Sareh			
	Main	Day 3	09:30
Hosseini Sedigheh			
	Main	Day 1	11:40
I			
Izadpanahi Mohammad Hossein			
	Main	Day 2	15:00
J			
Jaberi Ramin			
	Hegmataneh	Day 1	14:00
	Hegmataneh	Day 1	14:30
	Hegmataneh	Day 1	16:00
Jackisch Christian			
	Main	Day 2	11:35
Jafari Fatemeh			
	Main	Day 1	14:50
Jafari Mehrdad			
	Main	Day 1	14:50
Jafarian Amirhossein			
	Main	Day 2	09:05
Javadinia Alireza			
	Main	Day 1	09:05
Jazayeri Seyed Nematollah			
	Main	Day 3	09:30
K			
Kalantari Mahmoodreza			
	Main	Day 2	15:00
Karami Maryam			
	Tooska	Day 2	14:00
Karimi Arezo			
	Hegmataneh	Day 1	15:30
Kazemian Ali			
	Main	Day 1	14:50
Kazemzadeh Zeinab			
	Tooska	Day 1	08:30
	Tooska	Day 2	08:15
Khanali Leila			
	Tooska	Day 1	11:00
	Tooska	Day 2	08:45
Kianinia Mahsa			
	Main	Day 1	08:15
L			
Lesan Mansour			
	Main	Day 1	14:25
M			
Madani Hossein			
	Main	Day 1	08:15
Mafi Ahmadreza			
	Main	Day 2	11:00
Mahdavi Rabie			
	Hegmataneh	Day 2	08:00
Mahdavi Rabi			
	Hegmataneh	Day 2	09:00
Mahdavi Seyed Rabie			
	Hegmataneh	Day 2	10:00
Makhdoumi Yasha			
	Main	Day 1	09:50

Name	Hall	Day	Time
	Tooska	Day 1	10:00
Malekzadeh Mona			
	Main	Day 3	08:15
Mansouri Elham			
	Hegmataneh	Day 1	15:45
Mehrnoosh Nasrin			
	Tooska	Day 1	14:20
Mirzaei Somayeh			
	Tooska	Day 1	09:00
Mirzaie Hamidreza			
	Main	Day 1	11:40
Mofid Bahram			
	Hegmataneh	Day 1	12:40
	Main	Day 2	14:00
Mohammadi Mohammad			
	Hegmataneh	Day 1	12:00
	Hegmataneh	Day 1	15:00
Mohammadi Roshan Hossein			
	Tooska	Day 2	14:30
Mosleh Mohammad Amin			
	Hegmataneh	Day 2	12:45
Mosleh Shirazi Mohammad Amin			
	Hegmataneh	Day 2	11:00
Moslemi Dariush			
	Main	Day 1	14:00
Mozdarani Hossein			
	Hegmataneh	Day 1	14:00
	Hegmataneh	Day 1	16:00
	Hegmataneh	Day 2	08:00
	Hegmataneh	Day 2	10:00
N			
Nabavi Shahab			
	Hegmataneh	Day 1	08:45
	Hegmataneh	Day 1	10:00
Nazari Leyla			
	Main	Day 1	11:40
Nedaei Hassan			
	Hegmataneh	Day 2	10:00
Nickfarjam Abolfazl			
	Hegmataneh	Day 1	08:15
	Hegmataneh	Day 1	10:00
Noferesti Gholamhossein			
	Main	Day 2	08:15
P			
Pasdar Alireza			
	Main	Day 1	11:40
Pirjani Pooneh			
	Tooska	Day 2	08:45
Pourazer Parand			
	Tooska	Day 2	11:00
R			
Rahimi Aziz			
	Hegmataneh	Day 2	12:45
Rajabi Ali			
	Hegmataneh	Day 2	14:30
	Hegmataneh	Day 2	15:20
Rassouli Maryam			
	Tooska	Day 1	08:45
	Tooska	Day 1	14:00
Ravari Mohammad Ehsan			
	Hegmataneh	Day 1	09:15
Razmjoo Sasan			
	Main	Day 3	09:30
Rezaie Alireza			
	Main	Day 2	15:00
Robatjazi Mostafa			
	Hegmataneh	Day 1	10:00

The 7 th International Clinical Oncology Congress

هفتمین کنگره بین‌المللی کلینیکال انکولوژی

The 17th Iranian Annual Clinical Oncology Congress

2-4 February 2023

۱۵-۱۳ بهمن ۱۴۰۱

هفدهمین همایش سالانه کلینیکال انکولوژی،
فیزیک پزشکی، تکنولوژی پرتودرمانی، رادیوبیولوژی
و پرستاری انکولوژی

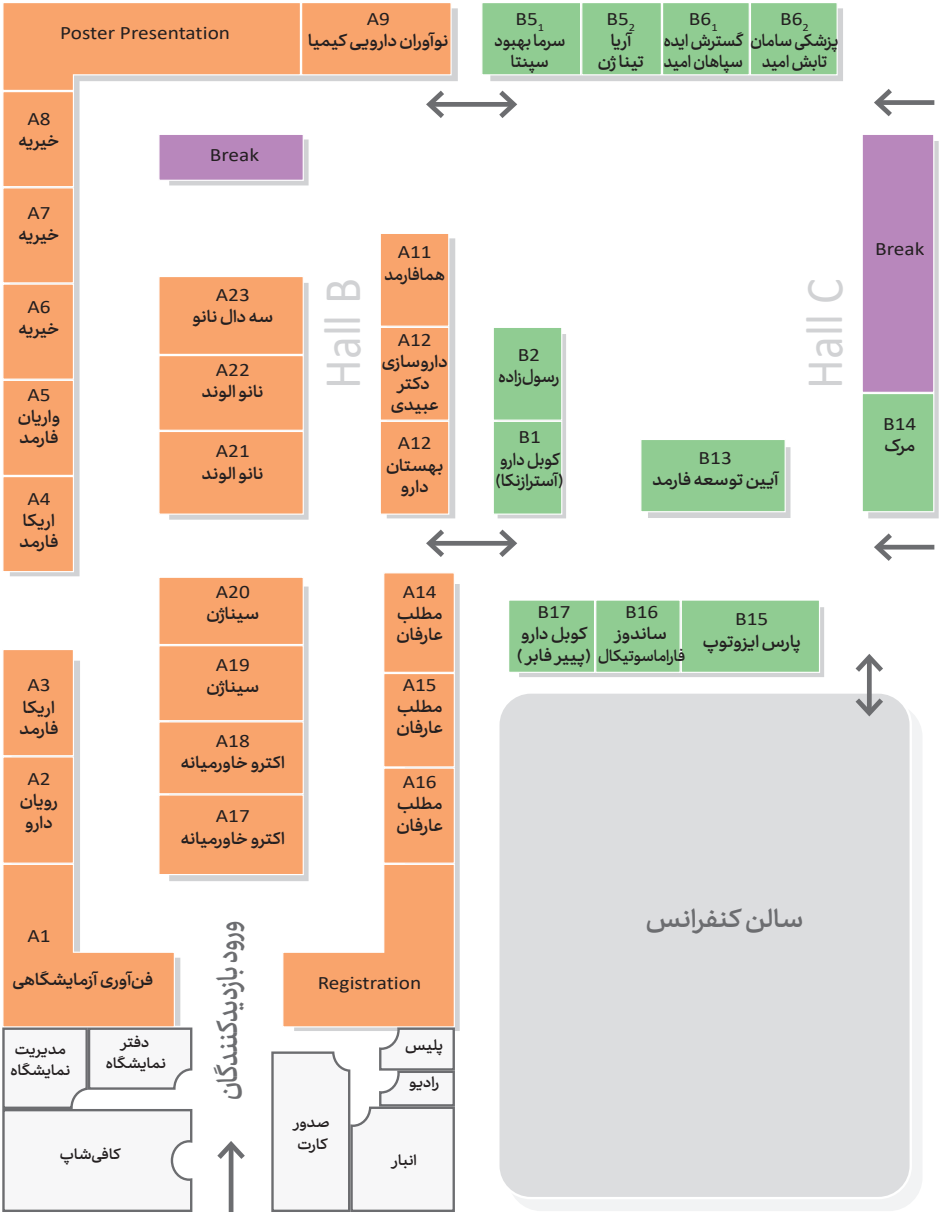
تهران، هتل المپیک

مهلت ثبت نام رایگان

۲ بهمن ماه ۱۴۰۱

iscocongress.com

ISRO
انجمن رادیوتراپی
انکولوژی ایران


Poster Presentation
A9 نوآوران دارویی کیمیا
B5₁ سرما بهبود سپنتا
B5₂ آریا تینا ژن
B6₁ گسترش ایده سپاهان امید
B6₂ پزشکی سامان تابش امید
A8 خیریه
A7 خیریه
A6 خیریه
A5 واریان فارمد
A4 اریکا فارمد
Break
A23 سه دال نانو
A22 نانو الوند
A21 نانو الوند
Hall B
A11 همافارمد
A12 داروسازی دکتر عبیدی
A12 بهستان دارو
B2 رسول‌زاده
B1 کوبل دارو (آسترازنکا)
B13 آیین توسعه فارمد
Hall C
Break
B14 مرک
A20 سیناژن
A19 سیناژن
A18 اکترو خاورمیانه
A17 اکترو خاورمیانه
A14 مطلب عارفان
A15 مطلب عارفان
A16 مطلب عارفان
B17 کوبل دارو (پییر فابر)
B16 ساندوز فاراماسوتیکال
B15 پارس ایزوتوپ
A3 اریکا فارمد
A2 رویان دارو
A1 فن‌آوری آزمایشگاهی
ورود بازدیدکنندگان
Registration
سالن کنفرانس
مدیریت نمایشگاه
دفتر نمایشگاه
کافی‌شاپ
پلیس
رادیو
صدور کارت
انبار

Abstracts & Posters of

The 7th International Clinical Oncology Congress

The 17th Iranian Annual Clinical Oncology Congress

ISRO
Iranian Society of Radiation Oncology

ISCO-ESMO Joint Session
ESMO

Uterine Sarcoma and Carcinosarcoma: A Two Center Experience in Iran

Sareh Hosseini[1], Soodeh Arastouei[1,*], Monavar Afzal Aghaee[2], Elham Zarei[1], Seyed Parham Ahmadi[3]

1. Cancer Research Center, Mashhad University of Medical Sciences
2. Department of Epidemiology and Biostatistics, School of Health Social Determinants of Health Research Center, Mashhad University of Medical Sciences
3. Student Research Committee, Faculty of medicine, Mashhad University of Medical Sciences

* Corresponding Author, Email: arastoueis971@mums.ac.ir

Introduction:

Uterine sarcomas (US) are rare heterogeneous group of tumors with different clinical behaviors and tumor responses. Carcinosarcoma (CS) of the uterus, which was long classified as US, was recently reclassified as a high-grade form of endometrial carcinoma. The aim of this study was to evaluate and compare patient and tumor characteristics, as well as the oncologic outcomes, in terms of overall and disease-free survival, in US and CS of uterus.

Methods:

All patients with histology proven diagnosis of US and CS of uterus, who were referred to two oncology centers of Mashhad university of medical sciences (Iran) between March 2011 and April 2020 were included.

Results:

A total of 33 patients, 23 with US, and 10 with carcinosarcoma (CS) were entered in this study. The overall mean age was 49.3 and 62.4 years old for CS and US respectively (P= 0.0001). Almost all patients were overweight, with mean BMI of 27.1 (CI: 25.6-28.7). Most of the patients were early stage. All of those with CS histology, received adjuvant treatment. The median overall survival was 50.88 ± 5.7 months. The overall survival rates at 2, 3 and 5 years were 75%, 56% and 41% respectively. There was no significant difference between CS ad US regarding overall and disease- free survival.

Conclusion:

Although patients with US are usually diagnosed in the early stage, the 5- year survival is low. The difference in outcome, between CS and US, was not significant in this analysis.

Predictive Modeling of PARP Inhibitor Anticancer Drug for BRCA Cancer Treatment Using QSAR Software

Fereshteh Fouladi[1,*], Fatemeh Ehsani Beshli[2]

1. Graduated from the Faculty of Chemical Engineering, Amirkabir University of Technology
2. PHD Student in Artificial Intelligence from the Faculty of Computer Engineering, Khajeh Nasir Toosi University

* Corresponding Author, Email: ffouladi1917@yahoo.com

Background:

Breast and ovarian cancer is one of the most famous common diseases among women, which has been associated with a significant growth in recent years, so that the statistical results are about 5 to 15 percent of random samples The Poly (ADP-ribose) polymerase (PARP) enzyme (in the treatment of BRCA1 disorders) is an important protein in the stabilization of various proteins in anti-cancer cells. Several drug combinations have been synthesized to inhibit the Poly (ADP-ribose) polymerase enzyme one of the kinases, which have significant potent inhibition with IC50 (Half-maximal concentration).

Methods and Materials:

QSAR modeling for predicting anticancer activity as a semi-inhibitory concentration (IC50) for 51 compounds of the benzo di imidazole-4-carboxamide (HBDI4CA) derivative as PARP enzyme inhibitors was performed against BRCA1 disease using GA-MLR (Genetic Algorithm- Multiple Linear Regression) and LS-SVM (Least Square – Support Vector Machine).

Results:

The statistical results showed the relative superiority of the SVM model to the MLR method in such a way that it's statistical parameters which include =0.97, F=130/730 and RMSE=0.132.

Conclusion:

It is a confirmation point on the acceptability of the chosen model for predicting the inhibitory activity with a high percentage of confidence. Also, molecular docking was performed in order to obtain the binding free energy and find the best binding mode of the ligand and PARP enzyme, and the results were complementary to the QSAR method.

Keywords: Polyadip-Ribose Polymerase Enzyme, QSAR Modeling, BRCA1 Disease, Enzyme Inhibitor.

Impact of Beam Energy on Track-averaged Linear Energy Transfer in Carbon-ion Therapy – A Monte Carlo Study

Elham Piruzan[1], Hojjat Mahani[2,*]

1. Medical Physics Group, Iran National Ion Therapy Center, Tehran, Iran.
2. Radiation Applications Research School, Nuclear Science and Technology Research Institute, Tehran, Iran.

* Corresponding author, Email: hmahani@aeoi.org.ir

Background:

Enhanced relative biological effectiveness (RBE) of carbon-ion beams allows superior target control and depends strongly on the linear energy transfer (LET). Track-averaged LET (LET_t) is a flavor LET that is widely used in RBE-LET models. By weighting the LET by the number of tracks, LET_t can be calculated over the particle energy spectrum. However, the influence of therapeutic carbon-ion energy on the LET_t is not studied yet.

Objectives:

This work aims to investigate the impact of carbon-ion energy on the LET_t using a set of Monte Carlo simulations. The depth distribution of LET_t was comprehensively studied at various beam energies

Methods:

To do so, version 8.2 of the GATE Monte Carlo simulator was performed. The simulation geometry was a pencil beam of carbon-ion impinging on a cubic water phantom of 30×30×30 cm^3 in volume. The dosel size was also set to 2×2×2 mm^3. The beam energy was assumed to be varying from 100 MeV/n to 400 MeV/n with 50 MeV/n intervals. LET actor was used to scoring the LET inside the water tank. Furthermore, the Dose actor was also exploited for both dose calculation and validation of the simulations against published experiments.

Results:

A good agreement was observed between the experimental and simulated dose distributions. LET_t exponentially decreases when beam energy increases. The peak position of the LET_t exactly coincides with the corresponding Bragg peaks for all investigated energies. The maximum value of LET_t is 91.48 and 9.03 keV/µm for 100 and 400 MeV/n, respectively. Similarly, the entrance LET_t is 22.43 and 3.83 keV/µm for 100 and 400 MeV/n, respectively. Increasing the beam energy gives rise to a broader peak in the LET_t spatial spectrum leading to loss of conformity for deep targets where utilization of higher energies is mandated.

Conclusions:

The presented study provides the quantitative spatial distribution of LET_t for carbon-ion therapy. The beam energy imposes a considerable impact on the LET_t in carbon-ion treatment for cancers.

Comparison the Received Doses to Organs at Risk in Radiotherapy with Photon and Proton Beams for Non-small Cell Lung Cancer

Zeinab Sedaghat[1,*], Mansour Zabihzadeh[1,2]

1. Department of Medical Physics, School of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
2. Department of Clinical Oncology, School of Medicine, Golestan Hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.

* Corresponding Author, Email: z.sedaghat875@gmail.com

Background:

Compared to the photon beams, particle beams provide superior dose distributions due to their finite range.

Purpose:

Estimation of unwanted doses to healthy tissues in proton therapy and comparison with photon beam in the treatment of non-small lung tumors.

Method:

18 MV Varian 2100C/D photon beam and proton beam (145 MeV single beam, scanning and passive method) were simulated by MCNPX. A spherical tumor with a diameter of 7.4 cm was located in the lower part of the left lung of the MIRD phantom. The spread-out Bragg peak was established from the weighted combination of beams (100 MeV to 150 MeV with a step of 5 MeV) for deep tumor coverage. The absorbed doses of primary and secondary particles by the tumor and organs of the lung, heart, esophagus, stomach, liver, spine, thyroid, and brain were calculated and compared.

Results:

More energy is absorbed in the tumor of proton that leads to better tumor control. In photon treatment, all examined organs are exposed to radiation, but in proton treatment, the received dose of the brain, liver, esophagus, is negligible.

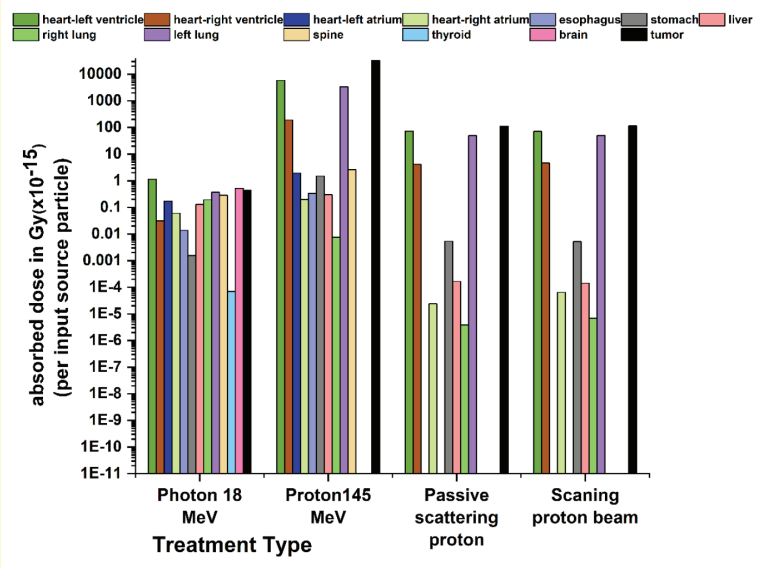


Figure: absorbed dose (per input source particle) in tumor and organs.

In photon therapy, the dose of secondary electrons that cause pollution, was the lowest in the thyroid and the highest in the left ventricle, 1.31×10^{-41} and 2.65×10^{-37} Gy per particle, respectively. In proton therapy, the left ventricle and the left lung have the highest neutron dose ratio. The absorbed dose ratio of neutron/photon indicates the lower contribution of photons than neutrons in dose delivery to the tissue. The neutron flux shows that the scattered radiation is often low in energy and the photon flux shows the highest peak for photons producing excited ^{12}C.

Conclusion:

Compared to photon beam, the proton beam absorbed optimal dose distribution in target volume (tumor in lung) while healthy tissues are less exposed to radiation.

Keywords: Non-small cell lung cancer, Proton therapy, MC simulations, Organs at risk (OARs), Secondary radiation, Spread-out bragg peak.

Machine Learning Methods for Rapid and Accurate Staging of Breast Cancer based on Mammograms

Elaheh Tarighati[1], Hadi Keivan[2], Hojjat Mahani[3,*]

1. Department of Medical Imaging Technology and Molecular Imaging, Faculty of Advanced Technologies in Medicine, Iran University of Medical Sciences, Tehran, Iran.
2. School of Allied Medical Sciences, Shahroud University of Medical Sciences, Shahroud, Iran.
3. Radiation Applications Research School, Nuclear Science and Technology Research Institute, Tehran, Iran.

* Corresponding Author, Email: hmahani@aeoi.org.ir

Background:

Breast cancer (BC) remains the main cause of women's deaths across the globe. Early diagnosis and accurate staging of BC play an important role in the selection of a suitable treatment method. While the biopsy is considered the gold standard in the staging of BC, it is invasive and thereby uncomfortable for patients.

Objectives:

This study aims at comparing three machine learning methods including feedforward neural network (FNN), k-nearest neighbors (KNN), and support vector machine (SVM) for rapid and accurate staging of early-stage BC based on mammograms of patients.

Methods:

To do so, the well-known Inception-V3 deep learning model was exploited to extract 4096 features from the mammograms. Then, the features were fed to the FNN, KNN, and SVM for binary (2-stage) classification. The dataset consists of 390 mammograms (patients) acquired from 2016 to 2020. The area under the curve (AUC) of the receiver operator characteristic (ROC) for the investigated methods was then calculated as a key metric indicating their performance. Furthermore, the sensitivity, specificity, and accuracy of the three classifiers were reported.

Results:

Overall, all three binary classifiers work well by providing an AUC of higher than 0.9. Among them, the KNN outperforms the rest by showing the highest AUC of 0.96. In contrast, the SVM results in the lowest AUC of 0.91. Compared to magnetic resonance imaging (MRI)-based networks with an AUC of 0.910, the mammogram-based methods offer superior performance mainly due to a large dataset and the robustness of the machine learning methods. The accuracy of KNN, FNN, and SVM was estimated to be 96.23, 90.57, and 82.08%, respectively, indicating their promising performance.

Conclusions:

Machine learning methods are fast and accurate enough to replace the aggressive biopsy of the breast for tumor staging. X-ray mammogram-based BC staging shows comparable performance with other imaging modalities. In addition, the KNN can be the classifier of choice for early BC staging.

Analysis of the Potential of Silicon as a Tissue Compensator in Conventional Radiotherapy for Head and Neck Cancer

Mohammad Javad Tahmasebi Birgani[1,*], Nahid Chegeni[2], Seyed Habib Seyed Alangi[3]

1. Professor of Medical Physics, Department of Medical Physics, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Iran
2. Associate Professor of Medical Physics, Department of Medical Physics, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Iran
3. MSc Student of Medical Physics, Department of Medical Physics, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Iran.

* Corresponding Author: Tahmasebi_MJ@yahoo.com

Introduction:

Radiotherapy treatment of head and neck cancer is considered one of the most challenging radiotherapy treatments from the beginning. Because due to the special structure of the anatomy of the neck area and also the presence of tissue of different types, treatment planning always has hot spots and non-uniform dose distribution.

Methods:

In this research, a combination of silicone and corn starch was used as a tissue compensator. Then, the electron density of the desired compound was obtained by converting the numbers of Hunsfield units equal to 1.20. In order to investigate the effect of the presence of this compensator on the treatment plan of 30 patients, a mold was manually added to the upper part of the neck with two electron densities of 1.2 and 1 (to check the water compensator) and with the usual treatment plan in the presence of a wedge filter The comparison was made.

Results:

The investigations showed that the unit monitor value significantly decreased by 19.5% for both compensators compared to the conventional treatment. Also, no significant difference was observed in the received dose of the spinal cord and the hot spot, and the mean and median dose of the whole plan has a very good compliance between the proposed and conventional treatment. There is no significant difference between the two proposeds plan.

Conclusion:

The result that we obtained from this study indicates that silicone material can act like wedge as a tissue compensator in head & neck treatment plan.

Investigation of Biological Damage Caused by Hyperthermia Induced by Cobalt-ferrite Nanoparticles on DU-145 Human Prostate Cancer Cells

Nazanin Oroskhani[1], Seied Rabi Mahdavi[1,2], Arezoo Karimi[3], Soheil Elmtalab[4,*]

1. Department of Medical Physics, School of Medicine, Iran University of Medical Sciences, Tehran, Iran.
2. Radiation Biology Research Center, Iran University of Medical Sciences, Tehran, Iran.

3. Department of Medical Physics, School of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
4. Department of Medical Physics and Biomedical Engineering, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran.
* Corresponding Author, Email: Soheil.elmtalab.phd@gmail.com

Introduction:

We know that the selective destruction of cancer cells without damage to Natural tissues has been an ideal and desirable target in cancer treatment for many years. Therefore, the development of more effective and less invasive treatments to replace or partner with conventional treatments is much needed. Hyperthermia is recognized as an alternative method that can be delivered alone or as an adjunct to radiation or chemotherapy for cancer treatment. The most important advantage of using magnetic nanoparticles in the treatment of hyperthermia is to increase the accumulation of magnetic nanoparticles in the tumor through a magnetic targeting strategy to increase the local temperature for cancer treatment while maintaining healthy tissue. The aim of this study is to investigate the biological damage caused by hyperthermia induced by cobalt-ferrite nanoparticles on DU-145 human prostate cancer cells.

Material and Methods:

To evaluate the toxicity of cobalt ferrite nanoparticles coated with F127, DU-145 cells were incubated with different concentrations of F127@CoFe2O4 (incubation time: 24 hours) and then the concentration of 512 µg/ml was selected as a non-toxic concentration. After incubation with nanoparticles, DU-145 cells were exposed to hyperthermia (400 kHz frequency, 1000 watts, 15 minutes). And then the colony assay test (CFA) was used to evaluate the proliferation of cells.

Results:

Thermal sensitivity increased in the presence of nanoparticles. The decrease in the survival fraction caused by CFA in different treatments showed that the nanoparticle was able to have a significant effect. The obtained result is very impressive, so that the survival fraction (SF) due to colony formation was reduced by 0.327 compared to the treatment without nanoparticles (from 0.8496 to 0.5226, $p<0.05$).

Conclusion:

We proved that nanoparticles and RF waves alone do not exert a significant effect, but their combination has a synergistic effect and reduces the colonization ability of DU-145 cells.

Keywords: Prostate cancer, DU-145, Cobalt ferrite nanoparticles, Hyperthermia

Evaluation of the Dose Fractionation Schedules in the Treatment of Non-melanoma Skin Cancer in the Surface High Dose Rate Brachytherapy Technique Using the Concept of EUBED

Arezoo Karimi[1,*], Nahid Chegeni[2], Ali Bagheri[3], Farshid Mahmoudi[4], Seyed Masoud Rezaeijo[2], Nazanin Oroskhani[5], Bahareh Arjmand[1]

1. MSc Student of Medical Physics, Department of Medical Physics, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Iran.
2. Associate Professor of Medical Physics, Department of Medical Physics, School of Medicine Ahvaz Jundishapur University of Medical Sciences, Iran.
3. Assistant Professor of Radiation Oncology, Department of Radiation Oncology, School of Medicine, Ahvaz Jundishapur University of Medical Sciences, Iran.
4. Assistant Professor of Medical Physics, School of Allied Medical Sciences, Lorestan University of Medical Sciences, Iran.
5. MSc Student of Medical Physics, Department of Medical Physics, Faculty of Medicine, Iran University of Medical Sciences, Iran.

* Corresponding Author, Email: arezoo.123467@gmail.com

Introduction:

The aim of this study is to evaluate the dose fractionation schedules in treating non-melanoma skin cancer in surface molds brachytherapy technique, using the concept of an equivalent uniform biological effective dose (EUBED) based on conventional electron therapy.

Methods and Materials:

A plan for surface molds brachytherapy with a hypothetical lesion similar to malignant skin lesions, which are often flat was designed by an oncologist. then, using the EUBED concept, the number of fractions and the fraction size for the surface molds brachytherapy regimen were modeled based on conventional electron therapy. The BED for electron therapy, the number of fractions, and fraction size for surface molds brachytherapy regimen with hypothetical lesion design were calculated based on the value range from 0.3 and α/β ratio from 8.5Gy.

Results:

The BED for electron therapy was 67.2Gy for determining the dose regimen in the surface molds brachytherapy technique. For values from 0.3 and α/β ratio from 8.5Gy, the fraction size (for 10 fractions) for surface molds (2 times a week) was 4.4Gy, and the number of fractions (fraction size 4Gy) was 12 fractions.

Conclusion:

In this study, using a computing program based on radiobiological concepts, the fraction size was calculated for a certain number of fractions and vice versa.

Keywords: HDR-BT, non-melanoma skin cancer, EUBED

Dosimetry Comparison of Target and Organ At-risk in Radiation Therapy of Breast Cancer Patients Using Conventional Dose Fractionation and Hypofractionation

Bahare Arjamand[1,*], Nahid Chegeni[2], Amir Danyaei[3], Farshid Mahmoudi[4], Ali Bagheri[5], Samira Razzaghi[6] , Naser Rasouli[7], Arezoo Karimi[8], Amal Saki-Malhi[1], Maryam Hazbavi[1]

1. Cancer Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
2. Department of Medical Physics, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

3. Razi Research Center, Faculty of Medicine, Lorestan University of Medical Sciences, Khorramabad, Iran
4. Department of Radiation Oncology, Faculty of Medicine, Golestan Hospital, Ahvaz Jundishapour University of Medical Sciences, Ahvaz, Iran
5. Department of Medical Physics, Faculty of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran
6. Department of Biostatistics and Epidemiology, Faculty of Health, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
7. Pain Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
8. Department of Radiation Oncology, Golestan Hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
* Corresponding Author, Email: Baharearjmand84@gmail.com

Introduction:

In this study in order to optimize treatment planning using different physical indicators in radiation therapy of breast cancer, conventional dose fractionation and hypo fraction treatment regimens were compared.

Methods and Materials:

This retrospective study was performed on the treatment plans of 30 patients with left breast cancer who were referred to Ahvaz Golestan Hospital between July 1400. Patients were treated with conventional dose-fractionation regimen and 3 hypofractionation regimens. Different dosimetry indicators for the target and organ at risk such as conformity index, homogeneity index and mean dose were obtained from the dose-volume histogram plot and in order to investigate, 4 different treatment regimens were compared with each other.

Results:

According to the obtained data, the decrease of the mean dose in the left breast (PTV), heart, and lung in hypofractionation methods was significant compared to conventional dose fractionation (P). The values of the homogeneity index ($P > 0.9999$) and conformity index ($P > 0.997$) were not significantly different between the conventional dose fractionation and 3 hypofractionation regimens.

Conclusion:

All 3 hypofractionation treatment regimens reduce dosimetry indicators compared to conventional dose fractionation. Therefore, hypo fractionated radiation therapy with fewer number fractions of treatment and a higher dose per fraction can be a suitable alternative to conventional dose fractionation.

Comparison of the heart and LAD doses in Radiation to Left Breast Cancer With and Without DIBH Technique

Mohsen Saeb[1,*], Fatemeh Heidari Kamalabadi[2], Nadia Najafizade[3], Faranak Felfelian[2]

1. Department of medical physics and radio-oncology, Faculty of Medicine, Isfahan University of Medical Science, Isfahan, Iran,
2. Rasa Imaging and Therapy center, Isfahan Healthcare City, Isfahan, Iran
3. Department of radio-oncology, Faculty of Medicine, Isfahan University of Medical Science, Isfahan, Iran

* Corresponding Author, Email: mohsen.saeb93@gmail.com

Background:

Radiation therapy for left-sided breast cancer causes increased cardiac side-effects, according to studies and patients often complain about cardiac complications when they experience this condition. As a result of the deep inspiration breath hold technique (DIBH), the radiation that is delivered to the heart is reduced and the immobility that is caused by DIBH helps optimize the treatment of the left breast.

Material and Methods:

In this study, ABC method of Elekta™ device model Vera HD was used to perform DIBH technique. Patients must prepare a special mouthpiece and participate in the coaching stage before doing DIBH. It is important that the patient holds his or her breath for at least 20 seconds and at a certain volume during this stage. The deeper and longer the patient inhales,

the closer we will be to the treatment goal. In this study, Monaco® 5.11 Treatment Planning System (TPS) software and the collapse cone (CC) Algorithm dose calculation were used.

Results:

In this study, fifteen patients with left breast cancer had breast conserving surgery. The heart and LAD dose and left lung dose of them in free breathing (FB) and deep inspiration breath hold (DIBH) were compared and evaluated in the 3D Conformal technique.
All plan met PTV's coverage criteria. Based on the average heart and left lung doses for the free breathing technique and the DIBH technique, respectively, the free breathing technique generated 10.7 and 12.72 Gy and the DIBH technique produced 4 and 14 Gy. The average dose of the LAD in the free breathing technique was 44 Gy and in the DIBH technique it was 23.9 Gy. (P-values <0.001).

Discussion:

Comparing 3D-CRT to DIBH for the protection of the heart and lungs in left breast cancer patients, 3D-CRT is the most effective. This technique provides better dose distribution. The patient's cooperation is a condition for performing this technique.

Keywords: Breast Cancer, DIBH (Deep Inspirational Breath Holding), FB (Free Breathing), Heart Disease, LAD

Evaluation of Skin Dose in Tangential Breast Treatment with 3D-CRT and Tomotherapy Techniques Using CIRS Phantom

Mohsen Saeb[1,*], Fatemeh Shahriyan[2]

1. Department of Medical physics, School of Medicine, Isfahan University of Medical Sciences
2. Faculty of Medical Radiation, School of nuclear Engineering, Shahid Beheshti University

* Corresponding Author, Email: mohsen.saeb93@gmail.com

Introduction:

Breast cancer is one of the most common types of cancer among women worldwide. Considering the sensitivity of the breast tissue and its proximity to the heart and lungs, the discussion of precise and adaptive dose distribution is very effective in preventing side effects. Calculating and measuring the dose of surface organs such as the skin is one of the basic challenges for several reasons that affect the dose distribution in this area. The purpose of this study is calculate the skin dose using tomotherapy and 3D-CRT treatment planning systems and compare their results.

Materials and Methods:

The data obtained from CT were transferred to the treatment planning systems (TiGRT, version 1.0.10.573) and (accuracy precision, version 2.0.1.1). Two technique, 3D-CRT and tomotherapy, were applied to the CIRS phantom to compaire the skin dose. A tangential treatment plan with two medial and lateral fields was used for the left breast.

Results:

According to the planning calculations, in the 3D-CRT technique , the nipple dose was 31.18 Gy, the average dose of the medial area was 33.60Gy, and the average dose of the lateral area was 32.94Gy and in the tomotherapy technique, respectively 37.09 Gy and 40.2 Gy and 37.96 Gy were obtained. ($p<0.001$)

Discussion:

By reducing mortality from breast cancer, patients became much more aware of several treatment-related complications affecting their quality of life. Among these, commonly observed complication is radiation-related dermatitis caused by whole breast radiotherapy (WBRT) and can cause mental and physical suffering due to pain, swelling and various cosmetic problems. According to the results obtained from the plannings, the amount of skin dose in 3D-CRT method is lower than tomotherapy. Therefore, 3D-CRT method works better in terms of reducing the complications of skin poisoning. If the tomotherapy method is used, the possible side effects must be told to the patient before the treatment.

keywords: Breast cancer, CIRS phantom, treatment planning, Tomotherapy

Physical Aspects of Skin Dose Distribution in Tomotherapy of Breast Cancer

Pegah Saadatmand[1], Seied Rabi Mahdavi[1,2,*], Alireza Nikoofar[3], Golbarg Esmaili[4], Samane Khazaie[1], Soheil Vejdani[5]

1. Department of Medical Physics, School of Medicine, Iran University of Medical Sciences, Tehran, Iran
2. Radiation Biology Research Center, Iran University of Medical Sciences, Tehran, Iran
3. Department of Radiation Oncology, School of Medicine, Iran University of Medical Sciences, Tehran, Iran
4. Radiotherapy Department, Pars Hospital, Tehran, Iran
5. Department of Radiation Oncology, Firoozgar Hospital, Iran University of Medical Sciences, Tehran, Iran

* Corresponding Author, Email: srmahdavi@hotmail.com

Purpose:

Assessing the accuracy of Treatment Planning System (TPS) in calculating the skin dose using for Tomotherapy of breast cancer can provide valuable information for clinical evaluations.

Methods:

The accuracy of Accuray Precision TPS in skin dose calculations was evaluated using Gafchoromic EBT3 film with delivering 2Gy to target volume adjacent to the surface of Delta4 phantomin helical and direct Tomotherapy plans. Delivery quality assurance (DQA) of Tomotherapy plan to confirm the compliance of the planned and delivered doses was performed with measurement of delivered dose using diode detectors inside Delta4. Set-up verification of Delta4 was done by registration of Mega-Voltage Computed Tomography (MVCT) image to planning CT image. The gamma analysis of skin dose distribution between TPS and EBT3 film was evaluated by RIT software.

Results:

Comparison of skin dose distribution between TPS and EBT3 film demonstrated acceptable gamma test for helical (up to 98.51%) and direct plan (up to 90.41%) using gamma index

criteria of 5mm/5%. However, the gamma index of helical and direct Tomotherapy plans with passing criteria of 3mm/3% was 84.15% and 79.12%, respectively.
Our results show good agreement (3-5%) between mean measured and calculated skin dose by EBT3 film and TPS, respectively, using “high” spatial resolution dose calculation for both helical and direct Tomotherapy plans.

Conclusion:

Tomotherapy TPS with a high spatial resolution of dose calculation is reliable for accurate skin dose calculation. It was validated against Gafchoromic EBT3 film within acceptable gamma passing rate.

Prediction of Acute Skin Toxicity in Tomotherapy of Breast Cancer Using Skin DVH Data

Pegah Saadatmand[1], Seied Rabi Mahdavi[1, 2,] *, Alireza Nikoofar[3], Golbarg Esmaili[4], Arman Esmailzadeh[1], Soheil Vejdani[5]

1. Department of Medical Physics, School of Medicine, Iran University of Medical Sciences, Tehran, Iran
2. Radiation Biology Research Center, Iran University of Medical Sciences, Tehran, Iran
3. Department of Radiation Oncology, School of Medicine, Iran University of Medical Sciences, Tehran, Iran
4. Radiotherapy Department, Pars Hospital, Tehran, Iran
5. Department of Radiation Oncology, Firoozgar Hospital, Iran University of Medical Sciences, Tehran, Iran

* Corresponding Author, Email: srmahdavi@hotmail.com

Purpose:

Investigation and quantification the relationship between skin Dose volume Histogram (DVH) and the risk of acute skin toxicity in Tomotherapy of breast cancer patients in

order to predict the risk of skin toxicity in each patient and make appropriate decisions to reduce the dose to the skin.

Method:

Forty-eight patients were treated with tomotherapy in dose range of 42.5-50 Gy for planning Target volume (PTV) ± 10 Gy for the tumor bed. Grading of acute skin toxicity of each patient was assessed as maximum score recorded during treatment cycle and after RT using the Common Terminology Criteria for Adverse Events (CTCAE) v4.0 guidelines. Then patients were separated into binary group classes with grade 0-1 vs 2-3. A 2-mm superficial skin layer (SL2) was identified as a surrogate for the skin on the CT planning, and a dose-volume histogram (DVH) was extracted for it. SL2 DVH difference between two groups of patients was investigated to find the best predictive parameters of acute skin toxicity after using univariate and multivariate logistic analysis on DVH values and patient's clinical parameters (BMI CTV volume, age and stage).

Results:

Forty-six % of patients experienced grade 2-3 skin toxicity. Differences in skin DVHs were significant in the range 48-60Gy (p-values < 0.05). V52 was the most predictive parameters for grade 2-3 skin toxicity (OR=1.128, 95% CI=1.03–1.24, p=0.002) with best cut-off of 3.85cc (AUC= 0.741) also when tested by clinical parameters. The goodness of fit logistic model (coefficients of-0.740 and 0.109 for $\beta 0$ and $\beta 1$ respectively) was adequate (HL test, p=0.59).

Conclusion:

Parameter of V52 of SL2 DVH is associated with the risk of acute skin toxicity in Tomotherapy of cancer breast. Constraining V52 < 3.85cc (equivalent to 19.25 cm^2 skin surface) should keep the risk of grade 2-3 toxicity below or around 30%.

Assessment of Heart Dose in the Treatment of Left Breast in the Techniques of VMAT and 3D-conformal

Mohsen Saeb[1,*], Fatemeh Heidari Beni[2]

1. Department of medical physics and radio-oncology, Faculty of Medicine, Isfahan University of Medical Science, Isfahan, Iran,
2. Department of radio-oncology, Seidalshohada Hospital, Isfahan University of Medical Science, Isfahan, Iran,

* Corresponding Author, Email:mohsen.saeb93@gmail.com

Introduction:

Radiotherapy (RT) for breast cancer improves survival, but poses risk to the heart resulting from a linear relationship between RT dose and heart disease.
The purpose of this study was to compare the heart,LADdosimetric parameters of two different breast radiotherapy techniques: VMAT and three- dimensional conformal RT (3D-CRT)
Treatment plans had been performed with Monaco software.

Material and Methods:

15 Breast Cancer patients were included in the study. Plans that employed the two techniques were generated for each patient. Dosimetric comparisons were conducted, and correlations with patient characteristics and dosimetric outcomes were analyzed.
heart dose parameters including mean dose to the left anterior descending artery (LAD) as well as dose-volume measurements including V5 ,V10, V25, V30 and V40 were recorded.

Results:

In this study, 50 gray dose has been given to PTV(left breast). In 3D-CRT V25 Gy and mean dose of the heart was received 15.7% and 10.7 Grey respectively and mean dose and maximum dose of the LAD have received 44 and 49.2 grey respectively. In VMAT technique V25 Gy and Mean Dose of the Heart in order was 1.68% and 4 Grey and mean dose and maximum dose of the LAD was 15.03 and 31.19 grey.

Conclusion:

In 3D-CRT technique the PTV recieved enough dose as well as in VMAT technique. VMAT are better technique for sparing heart and LAD tissue. The LAD volumes receiving 20, 30 and 40 Gy were reduced significantly with VMAT technique.

Calculation of Photon and Neutron's Organ Dose Distribution (Infield, Outfield) in Breast Cancer Radiation Therapy for Rando Phantom with Monte Carlo Code (Gate)

Marziyeh Behmadi[1,2], Mohammad Taghi Bahreyni Toossi[3,4], Mohammad Ehsan Ravari[3], Shahrokh Naseri[3,4], Mehdi Momennezhad[5], Hamid Gholamhosseinian[3,4], Mohammad Mohammadi[6,*]

1. Cancer Research Center, Semnan University of Medical Sciences, Semnan, Iran
2. Medical Physics Department, Faculty of Medicine, Semnan University of Medical Sciences, Semnan, Iran.
3. Medical Physics Department, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.
4. Medical Physics Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.
5. Nuclear Medicine Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.
6. Royal Adelaide Hospital, Department of Medical Physics, Adelaide, Australia.

* Corresponding Author, Email: Mohammad.Mohammadi@sa.gov.au

Introduction:

Organ dose distribution's calculation in radiotherapy and knowledge about its side effect as the second primary cancer is the most concern for medical physicists. Calculation of organs' dose distribution for breast cancer treatment plans with Monte Carlo (MC) is the main goal of this study.

Material and Method:

Elekta precise linac's photon mode was simulated and verified. Eight different plans on Rando phantom's left breast which were done with ISOgray treatment planning system (TPS), were used. The simulated plans verified photon dose distribution in clinical tumor volume (CTV) with TPS's dose volume histogram (DVH) and gamma index tools. To verify photon and neutron dose distribution in out-field organs, the point dose measurements' results were compared with the same point doses in MC simulation. Eventually, the DVHs for out-field organs which were extracted from TPS and MC were compared.

Result:

Based on the implementation of gamma index tools with 3%-3 mm criteria, simulated linac's output has a great agreement with the experimental measurements. Plan's simulation for in-field and out-field organs have an acceptable agreement with TPS and experimental measurement (photon and neutron), respectively. There is a difference between DVHs extracted from TPS and MC for out-field organs in low-dose parts. This difference is due to the inability of the TPS to calculate dose distribution in out-field organs.

Conclusion and Discussion:

This research modeled the treatment plans with MC code to have a more accurate calculation of out-field dose distribution and evaluate the important role of dose distribution for second primary cancer estimation.

The Prompt Gamma Monitoring with Multi-slit Collimator in Proton Therapy for Lung Cancer

Elham Rohollahpour[1], Hadi Taleshi Ahangari[1,*], Marziyeh Behmadi[1]

1. Department of Medical Physics, Faculty of Medicine, Semnan University of Medical Sciences, Semnan, Iran
* Corresponding Author, Email: taleshi@semums.ac.ir

Introduction:

Among secondary radiations, prompt-gamma (PG) rays were proposed for proton range and tumor locating. A detection system equipped with a multi-slit collimator for imaging prompt gamma (PG) emitted along proton tracks in the patient has been proposed for range verification. The aim of the work is the feasibility of PGI from an anthropomorphic phantom with lung cancer for real-time verification of ion range.

Materials & Methods:

PG imaging was simulated in the lung region (energy: 70-100 MeV) of an NCAT phantom without physiologic changes that included different sizes of spherical tumors. For each spot, protons were simulated. distance factor between the phantom surface and detection system surface that may influence the accuracy of detecting range were studied in 5 intervals. PG imaging was performed by a multi-slit camera with an energy window of 2-8 MeV in different tumor phantoms with the define new proton beam source appropriate to the size of the tumor to cover 98% of the GTV. One dimensional spatial correlation between the registered PG distribution profile and the proton depth dose profile with sigmoidal curve fitting was investigated.

Results:

Results indicated that the spectrum of gamma energy emitted from the NCAT phantom in the energy window of 2-8 MeV includes the highest intensity in the energies of 2.31, 4.4, 5.3, and 6.31 MeV. Examining the different distances of the detection system to the phantom showed that increasing the distance up to 260 mm will not significantly affect on the results of proton beam range estimation. The final results showed that the range estimation accuracy and tumor position in group 1 and 2 tumor phantoms were less than 2.5 mm from the real proton range, but with the increase in tumor size, range estimation accuracy expanded to 9 mm, and practically we can't use PG imaging to estimate the proton range in large tumors.

Conclusion:

Overall, with the increase in tumor size in lung cancer the range estimation accuracy of the proton beam and the location of the tumor, was decreased with the multi-slit PGI system, however, proton beam range estimation in the first and second groups of the tumor phantoms, which is common tumor size in lung cancer is possible

Second Cancer Risk from Pelvic Radiotherapy Due to Scattered Radiation

Shiva Rahbar Yazdi[1], Mohammad Hosein Zare[2,*], Hamed Zamani[3], Mohammad Ali Broomand4

1. MSc. Medical physics, Yazd shahid Sadoughi University of Medical Sciences and Health Services
2. Assistant Professor Medical Physics, Yazd shahid Sadoughi University of Medical Sciences and Health Services
3. Medical Physics Department, Medical School, Tabriz University of Medical Sciences, Tabriz, Iran
4. Clinical Oncology Department, Shahid Ramazan Zadeh clinic, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

* Corresponding Author, Email: mhzare2009@gmail.com

Purpose:

The purpose of this study was to evaluate the risk of gonad cancer induction attributable to pelvic radiation therapy in adult patients. By diagnosing simple methods out-of-field dose might be minimized.

Methods:

By characterizing the peripheral dose the TLDs were placed to the testis and ovary in two fractions of radiotherapy. All patients delivered a 45 Gy total dose in 4 field in prone position with 3D-planning. The doses from linear accelerator at 18 MV photon beam, were investigated.

Results:

The mean excess relative risk (ERR) based on the BEIR IIV models of men and women after 5 and 10 years radiotherapy treatment for pelvic radiotherapy 0.825, 0.701, 0.960 and, 0.804 respectively.

Conclusion:

Estimating the second cancer risk of untargeted organs is vital importance for survival

patients in RT (radiotherapy). By using the single-energy mode linear accelerator and proper shields can be minimized the out-of-field doses.

Keywords: Radiotherapy, cancer risk, TLD, Organ dose

A Novel Approach Toward Radio-Sensitization Agents in 106Ru ophthalmic Brachytherapy

Samaneh Hashemi[1], Zahra Siavashpour[2,*], Mahdi Kahani[3], Ramin Jaberi[4]

1. Medical Radiation Department, Shahid Beheshti University
2. Radiotherapy-Oncology Department, Shahid Beheshti University of Medical Sciences
3. Medical Radiation Department, Shahid Beheshti University
4. Cancer Institute, Imam Khomeini Hospital, Tehran University of Medical Sciences

* Corresponding Author, Email: zahrasiavashpour@gmail.com

Purpose:

To study the influence of hydrogen nanobubbles (H_2-NBs) employment on the efficiency of intraocular melanoma brachytherapy using a ruthenium-106 (^{106}Ru) electron emitter plaque.

Materials and Methods:

The Monte Carlo (MC) simulation and an experimental investigation using phantom and thermoluminescence dosimetry (TLD) were employed. By the MCNPX code, the human eyeball, its different components, and the tumor and CCA model of ^{106}Ru plaque were correctly and thoroughly represented. Various concentrations of H2-NBs with a diameter of 100 nm were simulated inside tumor tissue. An equivalent Resin phantom of the human eyeball was made using AutoCAD and 3D-Printer technologies. The tumor location was implanted as a hollow form in the phantom, allowing the required material to be added to it. The dosimeter, which was glass-bead TLDs in this project, may also be placed inside the phantom.

Results:

Using a 1% concentration of H2-NBs, a DEF of 93% and 98% was achieved near the tumor apex of 10 mm from the experimental setup and MC simulation, respectively. The results in a water phantom indicated that for volumetric concentrations of 0.1, 0.3, 0.5, 1, and 4%, a maximum dose enhancement of 154, 174, 188, 200, and 300% could be achieved, respectively. A dose reduction was seen at about 3 mm from plaque surface in the case of using different concentrations of H2-NBs.

Conclusion:

Because of their unique physical characteristics, H2-NBs can be utilized as an absorbed dose enhancer in 106Ru eye brachytherapy. These NBs can enhance the dose at the tumor's apex by many times, depending on the concentration, reducing plaque placement time on the patient's eye, reducing sclera absorbed dose, increasing the efficiency of electron eye plaques for treatment of the higher tumor depths, and decreasing the risk of patients' healthy organs.

Long-term Assessment of Varian Machine Performance Check (MPC) and Pylinac Software for MLC quality Assurance

Abolfazl Kanani[1], Najmeh Ghatei[2], Mohsen Bakhshandeh[3,*]

1. Medical Physics Department, Pardis Cancer Institute, Shiraz, Iran.
2. Medical Physics Department, Pardis Cancer Institute, Shiraz, Iran.
3. Department of Radiology Technology, Faculty of Allied Medical Sciences, Shahid

* Corresponding Author, Email: mbakhshandeh1978@gmail.com

Background and Objectives:

Machine Performance Check (MPC) is an automated and fully-integrated image-based

self-check quality control tool for assessing and verifying the performance of VitalBeam critical functions. Moreover, Pylinac is free python-based quality assurance (QA) software for quality assurance tasks in radiotherapy. This study aimed to evaluate the performance of the MPC test and Picket Fence module in Pylinac for multi-leaf collimator (MLC) QA task for two VitalBeam linacs over 2-years period.

Methods:

Data acquisition comprises a series of 24 months data for the linacs 1 and 2. The MPC repeatability was assessed through five successive measurements. The picket fence images for Pylinac analysis were acquired at four angles (0˚, 90˚, 180˚, and 270˚). The MPC results were compared with Pylinac analysis. Also, an intentional 2 mm MLC centerline offset was used to assess the capability of MPC and Pylinac for finding MLC faults. Additionally, the probable MLC faults were investigated using MLC patterns and simple visual approaches.

Results:

The repeatability of the MPC test was 0.02 mm which is less than MLC QA tolerance values. The MPC MLC test for linacs 1 and 2 revealed the MLC maximum offset values over 24 months were 0.69±0.03 mm, and 0.56±0.03 mm, respectively. The corresponding values for linac 2 were 0.04±0.01 mm and 0.042±0.02 mm. The picket fence analysis using Pylinac showed the maximum error were 0.1±0.05 mm and 0.1±0.01 mm for linacs 1 and 2, respectively. The MPC MLC test was found to agree with picket fence to within 0.6 mm for maximum offset. Totally, one out of tolerance MPC result was observed over 24 months with a maximum offset of 1.2 mm. The out of tolerance result was cleared by replacing the broken MLC. The corresponding maximum using Pylinac was 0.6 mm. For the MLC miscalibration test, the MPC demonstrated the maximum offset of-2.24 mm and -1.69 mm for Banks A and B, respectively. The Pylinac analysis showed a 2 mm offset for this case.

Conclusion:

MPC and Pylinac results for MLC QA correspond to each other, with considering an appropriate pass/fail criterion for Pylinac.

Radiosensitization Properties of Metallic Nanoparticles in Brachytherapy of Uterus Cancer by High Dose Rate Ir_192 Seed: A Simulation Study by MCNPX and MCNP6

Elham Mansouri[1,*], Asghar Mesbahi[1]

1. Drug applied research center, Tabriz university of medical sciences, Tabriz, Iran
* Corresponding author, Email: emansouri2012@gmail.com

Purpose:

In the current study, we aimed to investigate the macroscopic and microscopic dose enhancement effect of metallic nanoparticles in interstitial brachytherapy of uterus cancer by Iridium-192 source using a nano-lattice model in MCNPX (5) and MCNP6.1 codes.

Materials and Methods:

Based on a nano-lattice simulation model containing a radiation source and a tumor tissue with cellular compartments loaded with 7mg/g spherical nanoparticles (bismuth, gold and gadolinium), the energy deposited by the secondary electrons in microscopic and macroscopic level was estimated.

Results:

The results show that the values of macroscopic DEF is higher than microscopic DEF values and the macroscopic DEF values decreases as a function of distance from the brachytherapy source surface. Accordingly, it could be noted that gold nanoparticle have the highest radiosensitization effect among the other nanoparticles and the related DEF value is close to the resultant DEF values for bismuth nanoparticles. Also, the results revealed a remarkable discrepancy between the DEF and secondary electron spectra calculated by MCNPX (5) and MCNP6.1 codes which could be justified by the difference in energy cut-off and electron transport algorithms of two codes.

Conclusion:

According to the both MCNPX (5) and MCNP6.1 outputs, it could be concluded that the presence of metallic nanoparticles in the tumor tissue of uterus cancer increases the physical effectiveness of brachytherapy by Ir-192 source. The results presented herein give a physical view of radiosensitization potential of different metallic nanoparticles and could be considered in design of analytical and experimental radiosensitization studies in tumor regions using various radiotherapy modalities in the presence of heavy nanomaterials.

Estimation of dose distribution in breast cancer patients using deep learning technique

Mohammad Ehsan Ravari[1], Shahrokh Naseri[1,2], Marziyeh Behmadi[3,4], Sayed Kamaledin Ghiasi-Shirazi[5], Mehdi Momennezhad[6,*]

1. Medical Physics Department, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.
2. Medical Physics Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.
3. Cancer Research Center, Semnan University of Medical Sciences, Semnan, Iran.
4. Medical Physics Department, Faculty of Medicine, Semnan University of Medical Sciences, Semnan, Iran.
5. Department of Computer Engineering, Ferdowsi University of Mashhad, Mashhad, Iran.
6. Nuclear Medicine Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.

* Corresponding author, Email: MomennezhadM@mums.ac.ir

Introduction:

Todays, introducing a method to increase the speed of the treatment planning while maintaining the quality of treatment plans was the biggest challenge of radiation therapy. To obtain this end, a deep learning model was used to predict the dose distribution for 3D-conformal radiation therapy (3D CRT).

Material and Method:

The data of 120 breast cancer patients who were treated with 3D CRT technique were used. To predict the dose distribution, a 3D U-Res-Net model with two independent channels was used as the network's input, which includes the CT images and patients' contouring. The network's output was a channel which was the 3D dose distribution of the patients. The trained model was used to predict the dose distribution of patients in the test set. To quantitative evaluate of the predicted dose, the results were compared with the clinical dose. In the statistical method, the dose difference and mean absolute errors (MAE) were calculated for all voxels inside the body. In the dosimetric method, , , , , , for PTV and , for organ at risks (ORAs) were calculated.

Results:

The average and standard deviation (SD) dose difference of all patients and voxels in body were -0.60±2.81%. The highest and lowest MAE and SD values were 3.85±6.65%, 8.06±10.00%, respectively. The overall average MAE for all patients in the test set was 5.71±1.19%. There was no significant difference between the predicted and clinical dosimetry indexes in PTV and OARs except in right lung and spinal cord.

Discussion and Conclusion:

This study presented a deep learning model to predict the 3D dose distribution in the patients with left breast cancer. It predicts a dose distribution with optimal accuracy and precision. This model can be used in automatic TPS and also to predict dose distribution in the other cancers.

Dosimetric Comparison between the 3D-CRT and IMRT for Some Less-surveyed OARs in Nasopharynx Radiotherapy

Halimeh Ahmadpour[1], Alireza Mohammadkarim[2,*], Ali Kazemian[3], Ghazale Geraily[4], Peyman Hejazi[1], Nahid Gorjizadeh[5]

1. Department of Medical Physics, Faculty of Medicine, Semnan university of medical sciences, Semnan, Iran.
2. Radiation Sciences Research Center (RSRC), AJA University of Medical Sciences, Tehran, Iran.
3. Radiation Oncology Research Center, Cancer Institute, Tehran University of Medical Sciences, Tehran, Iran.
4. Medical Physics & Biomedical Engineering Department, Tehran University of Medical Sciences, Tehran, Iran.
5. Department of Radiation Oncology, Cancer Institute, Tehran University of Medical Sciences, Tehran, Iran.

* Corresponding author, Email: mohammadkarim.medphys@gmail.com,

The aim of this study is to assess the calculated dose of the head and neck organ at risks (OARs), included salivary glands, common carotid artery and thyroid gland in patient with nasopharyngeal cancer. In this study, patients with nasopharyngeal cancer were selected and organs' dose was assessed for subjects which treated with 3-dimension conformal radiation therapy (3D-CRT) and intensity modulated radiation therapy (IMRT) techniques. The 6 MV photon beams of a Elekta Synergy Linac were utilized for performing the treatment process. The prescribed dose of nasopharyngeal tumor in 3D-CRT was 70 Gy, and the treatment planning procedure was carried out by considering the well-known OARs limitations with Monaco treatment planning software. This technique was performed in three phases (23 fractions with opposed photon fields, 7 fractions with spinal cord removal, and 5 fractions by applying photon-electron fields). In IMRT cases, planning was carried out with 9 fields in 33 fractions by considering the standard dose constraints of OARs by using Monte Carlo methodology by using Monaco software.

The results showed that the mean dose (Dmean) received by the brain stem, parotid glands, submandibular glands, thyroid gland and common carotid artery in 3D-CRT technique were 42.5 ± 7.0 Gy, 63.7 ± 5.2 Gy, 64.1 ± 1.8 Gy, 63.0 ± 2.3 Gy and 62.7 ± 4.2 Gy, respectively. On the other hand, Dmean value for the mentioned organs in IMRT were

32.8 ±4.3 Gy, 33.7 ±4.0 Gy, 62.2 ±3.4 Gy, 60.6 ±2.4 Gy and 62.7 ±1.4 Gy, respectively. Furthermore, the maximum dose (Dmax) of the spinalcord with applying the 3D-CRT and IMRT techniques were 55.6 ± 4.0 Gy and 45.8 ±4.4 Gy, respectively. In terms of the average dosage reaching the submandibular glands, thyroid gland and common carotid artery, no statistical differences were seen between the outcomes of two techniques. But a significant increase was seen for the delivered dose of parotid glands and brainstem in 3D-CRT compared with IMRT. Moreover, a significant decrease is observed in Dmax to spinal cord in IMRT compared with 3DCRT.

Evaluation of Undesirable Doses in Carbon ion Beams Therapy for Intraocular Melanoma

Zeinab Sedaghat[1], Rezvan Khodadadi[2,*], Omid Afra[3], Sina Payandeh[4]

1. Department of Medical Physics, School of medicine, Ahvaz Jundishapur University of Medical sciences, Ahvaz, Iran.
2. Department of Nuclear Engineering, Faculty of Energy Engineering, Sharif University of Technology, Tehran, Iran.
3. Faculty of Energy Engineering and Physics, Amirkabir Industrial University, Tehran, Iran.
4. Department of Physics and Nuclear Engineering, Shahrood University of Technology, Shahrood, Iran.

* Corresponding Author, Email: rezvankh49@gmail.com

Background:

Carbon beams are ideal for treating intra-ocular lesions, since they can be made to deposit their dose in the tumor, while significantly limiting the dose received by non-involved ocular and orbital structures.

Purpose:

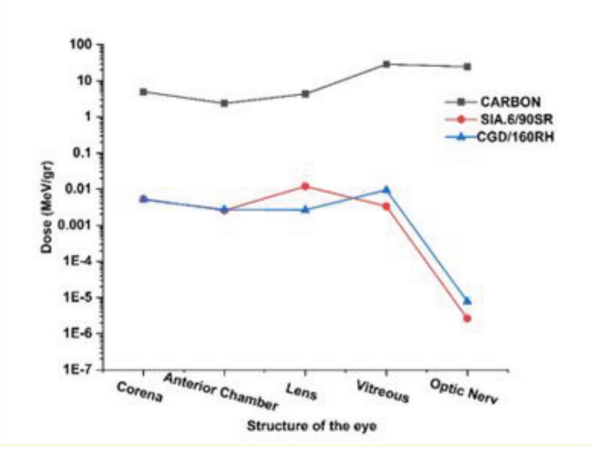
Calculation and comparison of dose in critical structure of the eye

Method:

The carbon therapy system according to the center of CATANA (Italy) was simulated using MCNPX code and validated with an average error of 1.78%. A grade 3 melanoma tumor with a diameter of 0.7 was considered in an adult human eye phantom. Carbon beam with 65 MeV/u energy was passively irradiated to the tumor and the dose received by the tumor, cornea and lens, optic nerves was calculated. The relative dose errors (uncertainty in dose per cell) in the simulations were <0.5%. It was compared with the research results of Barbosa et al.(1) and Yock et al.(2)

Results:

The results showed that the amount of the dose delivered by carbon beam to the tumor was 48.16 MeV/gr and the dose reached by SIA.6/^{90}SR was 2.64x10^{-1} MeV/gr and the dose reached by CGD/^{160}RH was 1.06 MeV/gr per particle.(1) The dose deposited in the tumor with carbon is 182 and 45.5 times by ^{90}SR and ^{160}RH, respectively. The higher dose will be more effective in destroying tumor cells and will reduce the treatment time. The amount of dose delivered to the critical structure of the eye can be seen in the diagram.



Figure,absorbed dose (per input source particle) organs.

Also, the percentage of dose delivered to the lens and optic nerve is reduced 2.88 and

46.88 MeV/gr, respectively, compared to proton 21.4 and 62.9 MeV/gr and photon 61.5 and 86.1 MeV/gr.(2)

Conclusion:

Carbon beams deliver the highest dose percentage to the tumor compared to other radiotherapy methods. It has a suitable dose distribution compared to photons and protons in the critical structure.

Keywords: Dosimetry, Eye, Intraocular melanoma, Carbon therapy, MC simulations.

The Hadrontherapy Treatment Simulation of Carbon Beam on Breast Cancer Using MCNPX Code

Rezvan Khodadadi[1], Zeinab Sedaghat[2], Omid Afra[3], Sina Payandeh[4,*]

1. Department of Nuclear Engineering, Faculty of Energy Engineering, Sharif University of Technology, Tehran, Iran.
2. Department of Medical Physics, School of medicine, Ahvaz Jundishapur University of Medical sciences, Ahvaz, Iran.
3. Faculty of Energy Engineering and Physics, Amirkabir Industrial University, Tehran, Iran.
4. Department of Physics and Nuclear Engineering, Shahrood University of Technology, Shahrood, Iran.

* Corresponding Author: Payandehsina5@gmail.com

Background:

Recently, hadron therapy has been widely considered and is considered a potential competitor of conventional radiotherapy.

Purpose:

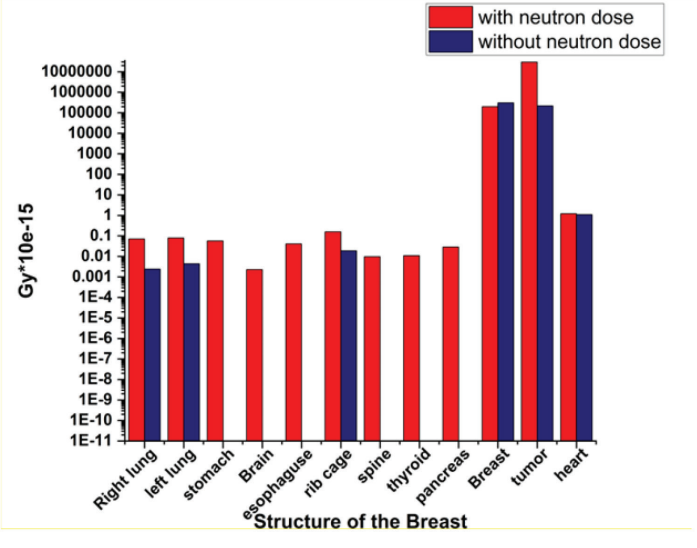
Investigation of the dose of carbon beams and secondary neutron particles to organs at risk in the treatment of breast cancer.

Method:

A grade one tumor with a diameter of 1.77 cm in the right breast of a human female phantom exposed to carbon radiation from the CATANA (Italy) hadron therapy system with an average error of 1.78% of the dose difference using the Monte Carlo method, code MCNPX 2.7 Simulated. Carbon beam with 90 MeV/u energy was passively irradiated to the tumor and the delivered dose was calcuted in the tumor, right and left lung, breasts, stomach, esophaguse, rib cage, spine, thyroid, pancreas, heart, brain. The calculation error was less than 1%.

Results:

The results of this study, with and without considering the secondary dose due to neutrons in Gy per particle, are shown in Figure. It is observed that the organs located at a distance from the tumor delivere a lower dose. The amount of dose reached due to carbon in the thyroid, esophaguse, pancreas, stomach is zero, and the highest dose is found in the right breast and the lowest dose in the left lung, respectively, but they are exposed to the dose caused by secondary neutrons.



figure,organ dose with and without secondary particle dose

Conclusion:

Despite the appropriate dose distribution of carbon beams, the dose due to secondary particles should be considered. But as the results showed, the amount of dose caused by neutrons is very low, and as a result, the probability of secondary cancer will be low.

Keywords: Breast Cancer , Carbon therapy, Dosimetry, MC simulations, Organs at risk, Secondary dose.

Postoperative Radiotherapy for Gastric Cancer: Dosimetric Evaluation of 3D-CRT Versus Tomotherapy

Arezoo Kazemzadeh[1], Leili Mahani[2], Mahsa Kianinia[3], Ahmad Shanei[1]

1. Department of Medical Physics, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran
2. Seyed-Al-Shohada Hospital, Isfahan University of Medical Science, Isfahan, Iran
3. Department of Radio-Oncology, Seyed-Al-Shohada Hospital, Isfahan University of Medical Sciences, Isfahan, Iran

* Corresponding Author, Email: Shanei@med.mui.ac.i

Background and Objectives:

In the current planning study, the authors aimed to assess the dosimetric differences between 3-dimensional conformal radiotherapy (3D-CRT) and helical tomotherapy (HT) for gastric cancer patients as adjuvant radiotherapy and determine the optimal radiotherapy technique.

Methods:

In this retrospective study the database of twenty patients with total or partial gastrectomy was included. Two treatment plans, HT and 3D-CRT, were optimized for each patient according to the constraints proposed in the QUANTEC. The dosimetric comparison of the two techniques was based on dosimetric quantities derived from dose-volume histograms.

Results:

For gastric cancer, adequate dosimetric target coverage was achieved with HT and 3D-CRT techniques. Indeed, HT significantly provided more homogeneity than 3D-CRT (p-value < 0.05). Both kidneys were significantly well-preserved with HT. On the other hand, HT significantly lowered the V13 and V20 of the left and right kidneys. Also, the mean dose of kidneys (in Gy) was statistically different between 3D-CRT and HT (17.17 vs 10.6 for the left kidney and 11.01 vs 5.4 for the right kidney, respectively (p-value < 0.05)). Moreover, the liver V30 was statistically inferior with helical tomotherapy. Also, the worst spinal cord maximum doses were seen with 3D which were 40.25 and 30.41 for 3D-CRT and HT, respectively (p-value < 0.05).

Conclusions:

Our findings demonstrate that applying modern radiotherapy techniques like helical tomotherapy in postoperative gastric cancer patients is related to significant OAR sparing while delivering a homogeneous dose to the target result in more benefit to patients.

The Necessity of Standard Ventilation and Air Conditioning System in Radiotherapy Bunkers

Nader Sepanlou[1,*]

1. Cancer Institute, Imam Khomeini Hospital Complex, Tehran University of Medical Sciences
* Corresponding author, Email: nadersepanloo69@gmail.com

Background:

Ozone's odor is reminiscent of chlorine and can detected by humans at concentration above 0.015-0.020 ppm. The studies suggest that ozone is harmful to people at above 0.010 ppm concentrate in the air. Ozone together with radioactive elements oxygen-15

and nitrogen-13, which are created in linacs with energy above 10 MeV in the environment, can be very harmful for staffs and patients. Therefore, the necessity of ventilation and air conditioning according to international standards is mandatory in radiotherapy bunkers.

Methods:

Some patients have noted a foul odor like chlorine during radiation therapy sessions. This is the smell of ozone created by X-ray of linacs.
The overall reaction to produce ozone from ordinary oxygen are as follows:
The bond energy of O2 is 498 KJ/mol. & 3O2 → 2O3 ΔH= 286 KJ so E= (3×498 + 286) KJ/4mol = 445 KJ/mol
445 KJ/mol × 6.2×(10)^18 = 2777470331576830000 MeV / 6.02×(10)^23 = ***0.0045 eV***
Therefore, for all spectrums of ionized radiation, the ambient air is ionized and ozone gas is produced. Since concentrations above 0.125 ppm are harmful to humans, ventilation is necessary.
On other hand, it has been proven that at energies above 10MeV due to the photoneutron phenomenon, radioactive elements oxygen-15 and nitrogen-13 are created in the air of bunker, which also produce two photons with an energy of 0.511 KeV.
For these reasons, it has been mentioned in the report of various international organizations regarding the necessity and standard amount of ventilation required in radiotherapy bunkers.

For example:

IAEA, HUMAN HEALTH REPORTS No. 17 2022 :
High energy linacs with high dose rate modes create ozone, so 2-10 air exchanges of room volume per hour are needed.
NCRP Report No.151:
“For normal clinical use of electron beams, a room ventilation rate of about tree room changes per hour is more than adequate for health protection”

Results:

Therefore, for all linac’s particles products and energy spectrums, it is necessary to use proper ventilation and air condition, with 2 to 10 exchanges per hour, in the radiotherapy bunkers.

Keywords: Ozone, Radioactive elements, Air, Ventilation, Air condition

Author Index


NEO RAPA
Everolimus
Come to life with better choice!
INDICATIONS AND USAGE: Everolimus is a kinase inhibitor indicated for the treatment of: Postmenopausal women with advanced hormone receptor-positive, HER2 negative breast cancer in combination with exemestane after failure of treatment with letrozole or anastrozole; Adults with progressive neuroendocrine tumors of pancreatic origin (PNET) and adults with progressive, well-differentiated, non-functional neuroendocrine tumors (NET) of gastrointestinal (GI) or lung origin that are unresectable, locally advanced or metastatic. Adults with advanced renal cell carcinoma (RCC) after failure of treatment with sunitinib or sorafenib; Adults with renal angiomyolipoma and tuberous sclerosis complex (TSC), not requiring immediate surgery. DOSAGE AND ADMINISTRATION: 10 mg orally once daily, for breast cancer, NET, RCC, TSC-Associated Renal Angiomyolipoma. DOSAGE FORMS AND STRENGTHS: 5 mg and 10 mg tablets. CONTRAINDICATIONS: Clinically significant hypersensitivity to Everolimus or to other rapamycin derivatives. ADVERSE REACTIONS: Breast cancer, NET, RCC: Most common adverse reactions (incidence ≥ 30%) include stomatitis, infections, rash, fatigue, diarrhea, edema, abdominal pain, nausea, fever, asthenia, cough, headache, and decreased appetite. TSC-Associated Renal Angiomyolipoma: Most common adverse reaction (incidence ≥ 30%) is stomatitis. TSC-Associated SEGA: Most common adverse reactions (incidence ≥ 30%) are stomatitis and respiratory tract infection. TSC-Associated Partial-Onset Seizures: Most common adverse reaction (incidence ≥ 30%) is stomatitis.
Reference: Everolimus FDA label 2022; Reference ID: 4930274
BRATIGA
Abiraterone
Live life, as it was
BRATIGA 500
BRATIGA 250
INDICATIONS & USAGE: Abiraterone acetate is a CYP17 inhibitor indicated in combination with prednisone for the treatment of patients with: metastatic castration-resistant prostate cancer (CRPC) & metastatic high-risk castration-sensitive prostate cancer (CSPC). DOSAGE AND ADMINISTRATION: Abiraterone acetate 1,000 mg orally once daily with prednisone 5 mg orally twice daily for metastatic castration-resistant prostate cancer (CRPC). Abiraterone acetate 1,000 mg orally once daily with prednisone 5 mg orally once daily for metastatic high-risk castration-sensitive prostate cancer (CSPC). Patients receiving Abiraterone acetate should also receive a gonadotropin-releasing hormone (GnRH) analog concurrently or should have had bilateral orchiectomy. Abiraterone acetate tablets must be taken as a single dose once daily on an empty stomach. Do not eat food 2 hours before and 1 hour after taking Abiraterone acetate. The tablets must be swallowed whole with water. Do not crush or chew tablets. DOSE MODIFICATION: For patients with baseline moderate hepatic impairment (Child-Pugh Class B), reduce the Abiraterone acetate starting dose to 250 mg once daily. For patients who develop hepatotoxicity during treatment, hold Abiraterone acetate until recovery. Retreatment may be initiated at a reduced dose. Abiraterone acetate should be discontinued if patients develop severe hepatotoxicity. ADVERSE REACTIONS: The most common adverse reactions (≥10%) are fatigue, arthralgia, hypertension, nausea, edema, hypokalemia, hot flush, diarrhea, vomiting, upper respiratory infection, cough, and headache. The most common laboratory abnormalities (>20%) are anemia, elevated alkaline phosphatase, hypertriglyceridemia, lymphopenia, hypercholesterolemia, hyperglycemia, and hypokalemia.
Reference: Abiraterone acetate FDA label 2021; Reference ID: 4845886
abidi Oncology

Zelorec
Capecitabine Tablet 500 mg

Xalico
Oxaliplatin Vials 50, 100 mg

Rinteca
Irinotecan vial 100 mg

Bratoma

Abiraterone ACTe
F.C. tablet 250, 500 mg

Onkotaxel
Docetaxel Vials 20, 80, 160 mg

Pemaxa
Pemetrexed vial 100, 500 mg

Tinlo
Erlotinib tablet 150 mg

XCarboxa
Carboplatin Vials 50, 150, 450 mg

Oncozar
Gemcitabine Vials 200, 1000 mg

Lipaxol
Paclitaxel Vial 30, 100, 150, 300 mg

Ibract
Palbociclib capsules 75,100, 125 mg

Evrolia
Everolimus Tablets 5, 10 mg

Evacim
Bevacizumab Vials 100,400 mg

ACTERO

DEVELOPING FUTURE

AQVIDA

Oxaliplatin AqVida
50mg/10ml - 100mg/20ml
Solution for Infusion

Sunitinib AqVida
12.5mg - 25mg - 50mg
30 Capsules in a bottle

Gemcitabine AqVida
200mg/2ml - 1g/10ml
Solution for Infusion

Imatinib AqVida
100 mg - 400 mg
30 Capsules in a 3 blisters

Paclitaxel AqVida
30mg/5ml - 100mg/16.7ml
150mg/25ml - 300mg/50m
Solution for Infusion

Capecitabine AqVida
500mg
60 Tablets in 6 blisters

Bortezomib AqVida
3.5mg
Lyophilized powder for injection
For bolus IV or SC injection only

ROOYAN DAROU
PHARMACEUTICAL COMPANY

شرکت داروسازی رویان دارو
نماینده انحصاری شرکت اکویدا آلمان
۰۲۱-۸۸ ۸۹ ۶۷ ۶۹
۰۲۱-۸۸ ۸۹ ۴۲ ۵۴

Your **German** Source for Oncology Products

www.AqVida.com

TINAGRAST™

Filgrastim

300 Micrograms/0.5mL

PegTinaKid™

Pegfilgrastim

3 mg / 0.3 mL

TinaKid™ 150

Filgrastim

150 Micrograms/0.25 mL

TinaPeg™

Pegfilgrastim

6 mg / 0.6 mL

ATG

World class quality in the treatment of neutropenia.

ATG®

AryaTinaGene

Biopharmaceutical Co.

THE WAY TO A BETTER LIFE

AstraZeneca

ZOLADEX®

Life is all about Choices

Zoladex (all indications) Abbreviated prescribing information

Name of the medicinal product ZOLADEX 3.6 mg Goserelin acetate (equivalent to 3.6 mg goserelin). Depot, pre-filled syringe & ZOLADEX LA 10.8 mg depot Goserelin acetate (equivalent to 10.8 mg goserelin) INDICATIONS AND USAGE: ZOLADEX LA 10.8 mg& 3.6 are indicated in the management of prostate cancer suitable for hormonal manipulation. DOSAGE AND ADMINISTRAITON: Caution should be taken while inserting ZOLADEX into the anterior abdominal wall due to the proximity of underlying inferior epigastric artery and its branches.Use extra care when administering ZOLADEX to patients with a low BMI and/or who are receiving full anticoagulation medication .Adult Males (including the elderly) One 10.8 mg depot of ZOLADEX LA injected subcutaneously into the anterior abdominal wall, every 12 weeks. No dosage adjustment is necessary for patients with renal impairment. No dosage adjustment is necessary for patients with hepatic impairment. For Zoladex 3.6: One 3.6 mg depot of ZOLADEX injected subcutaneously into the anterior abdominal wall, every 28 days. Females : ZOLADEX LA 10.8 mg is not indicated for use in females.Children: ZOLADEX LA 10.8 mg is not indicated for use in children. WARNINGS AND PRECAUTIONS: Injection site injury has been reported with ZOLADEX, including events of pain, haematoma, haemorrhage and vascular injury. Monitor affected patients for signs or symptoms of abdominal haemorrhage. In very rare cases, administration error resulted in vascular injury and haemorrhagic shock requiring blood transfusions and surgical intervention. Extra care should be taken when administering ZOLADEX to patients with a low BMI and/or receiving full anticoagulation medications [see Dosage and Administration].ZOLADEX LA 10.8 mg is not indicated for use in females, since there is insufficient evidence of reliable suppression of serum oestradiol. For female patients requiring treatment with goserelin, refer to the prescribing information for ZOLADEX 3.6mg. ZOLADEX LA 10.8 mg is not indicated for use in children, as safety and efficacy have not been established in this group of patients..The use of ZOLADEX LA 10.8 mg in men at particular risk of developing ureteric obstruction or spinal cord compression should be considered carefully and the patients monitored closely during the first month of therapy. If spinal cord compression or renal impairment due to ureteric obstruction are present or develop, specific standard treatment of these complications should be instituted. In men, preliminary data suggest the use of a bisphosphonate in combination with a LHRH agonist may reduce mineral loss.A reduction in glucose tolerance has been observed in males receiving LHRH agonists. This may manifest as diabetes or loss of glycaemic control in those with pre-existing diabetes mellitus. Consideration should therefore be given to monitoring blood glucose..Androgen deprivation therapy may prolong the QT interval, although a causal association has not been established with ZOLADEX. In patients with a history of or who have risk factors for QT prolongation and in patients receiving concomitant medicinal products that may prolong the QT interval (see interactions) physicians should assess the benefit risk ratio including the potential for Torsade de Pointes prior to initiating ZOLADEX.CONTRAINDICATIONS:ZOLADEX LA 10.8 mg should not be given to patients with a known hypersensitivity to the active substance, to other LHRH analogues, or to any of the excipients of this product. ADVERSE REACTIONS: Libido decreaseda.Hot flusha.Hyperhidrosis.Erectile dysfunction.Vulvovaginal dryness.Injection site reactions .Glucose tolerance, areduction in glucose tolerance has been observed in males receiving LHRH agonists.This may manifest as diabetes or loss of glycaemic control in those with pre-existing diabetes mellitus impaired.Paraesthesia.Spinal cord compression.Cardiac failuref, myocardial infarctionf .Blood pressure abnormalc.Rash.Alopecia.Bone pain.Gynaecomastia.Tumour flare, tumour pain.Bone density decreased .Injection site reaction.Drug hypersensitivity .Breast tenderness.Anaphylactic reaction.Ovarian cyst.Ovarian hyperstimulation syndrome.Pituitary tumour .Pituitary haemorrhage.Degeneration of uterine fibroid. DRUG INTERACTIONS: None known.Since androgen deprivation treatment may prolong the QT interval, the concomitant use of ZOLADEX with medicinal products known to prolong the QT interval or medicinal products able to induce Torsade de Pointes should be carefully evaluated (see Warnings and Precautions). USE IN SPECIFIC POPULATIONS: Pregnancy and LactationZOLADEX LA 10.8 mg is not indicated for use in females. OVERDOSE: There is limited experience of overdosage in humans. In cases where ZOLADEX has unintentionally been readministered early, or given at a higher dose, no clinically relevant adverse effects have been seen. Animal tests suggest that no effect other than the intended therapeutic effects on sex hormone concentrations and on the reproductive tract will be evident with higher doses of ZOLADEX LA 10.8 mg. If overdosage occurs, this should be managed symptomatically. These highlights do not include all not include all the information needed to use zoladex 10.8 mg & 3.6 mg safely and effectively. See full prescribing information for zoladex 10.8 mg& 3.6 mg

API drafted on 5th June 2018 .Date of revision of the text: July 2015 .Doc ID-002764123 V11.0

For Medical Information requests please send to: medinfo-ne@astrazeneca.com
For Adverse Events reporting please send directly to: patientsafety.ne@astrazeneca.com Or contact our office on:
Tel. +96265827580, +9611383647

Full prescribing information of Zoladex is available upon request from AstraZeneca or kindly refer to the insert leaflet.

AstraZeneca

ZOL-12-MAG-0921-0923-NE

Neupogen®
Filgrastim(G-CSF)

Nplate®
Romiplostim

XGEVA®
(denosumab)
PRECISE. PROVEN. PRACTICAL.

Vectibix®
(panitumumab)

A Worldwide Pioneer in Biotechnology

behestan darou

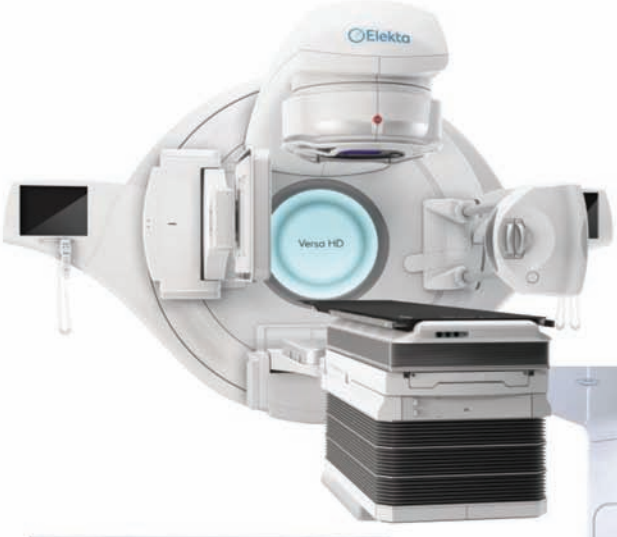
شرکت بهستان دارو
نماینده‌ی رسمی کمپانی امژن در ایران است.

فن آوری آزمایشگاهی

Elekta

طیف وسیع محصولات متناسب با همه نیازهای
مراکز رادیوتراپی انکولوژی

رادیوتراپی
براکی تراپی
رادیوسرجری
ترکیب ام آر آی و رادیوتراپی
نرم افزار های آنکولوژی
سیستم طراحی درمان



دفتر واحد بازاریابی: خیابان سهروردی شمالی، خیابان شهید قندی (پالیزی)، رو به روی کوچه بیستم، پلاک ۷۴
کدپستی: ۱۵۵۴۸۴۳۴۹۹ صندوق پستی: ۷۱۳۶-۱۵۸۷۵ تلفن: ۴-۸۸۵۲۳۹۵۱ فاکس: ۸۸۷۵۰۶۴۹

Sandosphere® LAR

Octreotide Acetate 20 mg | 30 mg

Sing the Song of Life

آواز زندگی سر بده

021-62769000

homapharmed.com

@homapharmed

Homa Pharmed Pharmaceutical

primm

Noavaran Daroui
KIMIA Co.

REGONIB®
Regorafenib
40 mg Tablets

PAZOTRI®
Pazopanib
200, 400mg film coated Tablets

LOKEMIDE®
Ibrutinib
70, 140 mg Capsules

SIMERTA®
Osimertinib
40, 80mg film coated Tablets

VANDESA®
Vandetanib
100, 300mg film coated Tablets

Once you choose hope
every thing's possible

+98 21 66 43 70 14
+98 21 88 01 29 46
kimia-pharma.co

نوآوران دارویی
کیمیا
(سهامی خاص)

In adult patients with newly diagnosed glioblastoma multiforme concomitantly with radiotherapy and subsequently as monotherapy, and patients ≥3 years in age with malignant glioma showing recurrence or progression after standard therapy

Experience the Standard of Care

- Significantly improved survival in newly diagnosed and recurrent gliomas
- A well-established treatment regimen
- Consistent, dependable efficacy and pharmacokinetics
- Available in a variety of dosing options
  - TEMODAL Capsules in individual color-coded sachets or child-resistant bottles
  - TEMODAL IV

Temodal® ™
temozolomide
for Injection and Capsules

BEHESTAN DAROU

Immunotherapy for life

KEYTRUDA®
(pembrolizumab) injection 100 mg

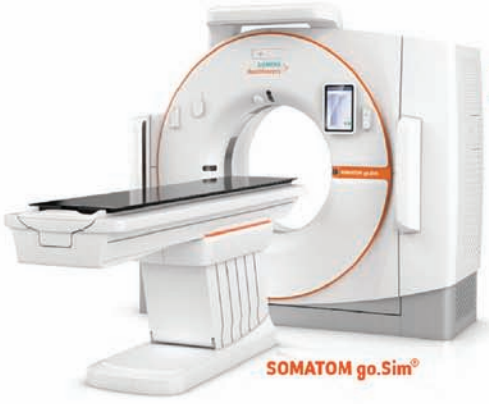
GIVE YOUR PATIENTS **A KEY**

- METASTATIC NSCLC
- ADVANCED MELANOMA
- RECURRENT OR METASTATIC HNSCC
- ADVANCED UROTHELIAL CARCINOMA
- ADVANCED GASTRIC OR GEJ CANCER
- REFRACTORY OR RELAPSED CLASSICAL HODGKIN LYMPHOMA
- ADVANCED MSI-H/dMMR CANCERS
- METASTATIC TRIPLE NEGATIVE BREAST CANCER

MSD

behestan darou

SIEMENS Healthineers



SOMATOM go.Sim®

ACCURAY

CyberKnife®

Radixact®

varian

A Siemens Healthineers Company

TrueBeam®

Matlab Arefan Eng.Co

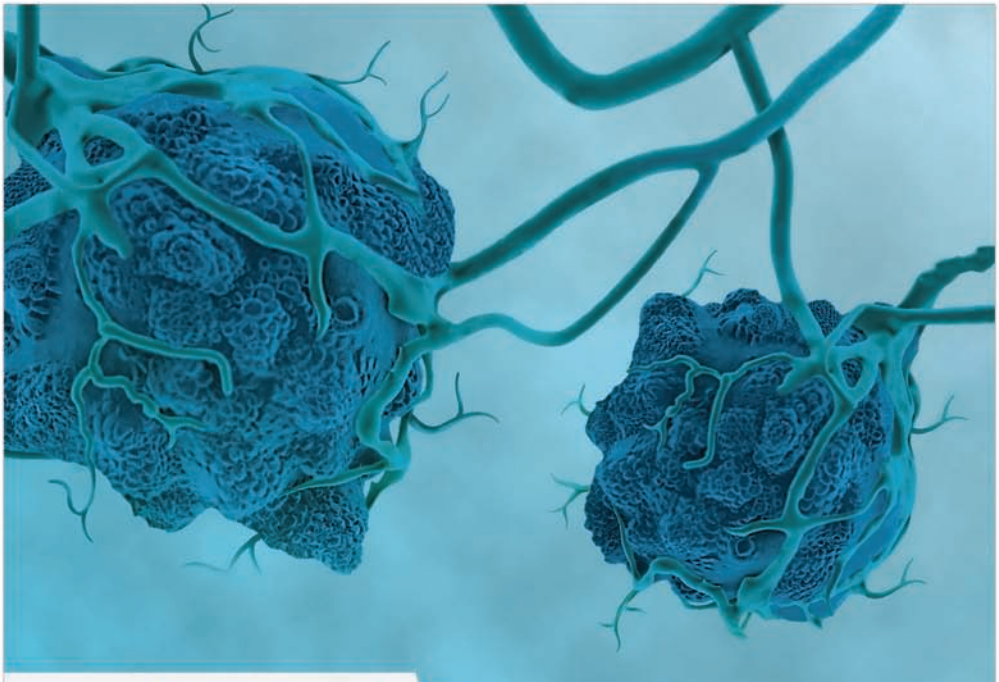
Medical Healthcare Authorized

شرکت مهندسی مطلب عارفان

تجهیزات پزشکی

تهران، میدان آرژانتین ، خیابان الوند ، کوچه سی و پنجم ، پلاک ۸ ، تلفن: ۵۱-۸۸۶۵۱۹۵۰-۰۲۱


MERCK



Stivant™

Bevacizumab

100 mg/4 ml
400 mg/16 ml

Life Matters.
Live More.

Orchid Pharmed
Sky's the Limit

ARYOGEN

M.Rasoolzadeh & Co.

شرکت رسول زاده و شرکاء

PTW FREIBURG

BEAMSCAN

A New High Tech Water Phantom

PTW FREIBURG

OCTAVIUS 4D

Patient Plan Verification

modusQA

Accuracy. Confidence.™

فانتوم های رادیوتراپی و تصویربرداری

Xstrahl

سیستم اورتوولتاژ

Xray Therapy

heckel

هایپرترمیا تمام بدن

C-RAD

سیستم های GATING

کنترل تنفسی در رادیوتراپی

PROWESS

سیستم طراحی درمان بیمار

TEMA SINERGIE

High tech, high care

A Radiopharmaceutical Dose Administration System

تهران -خیابان آفریقا،بلوار اسفندیار،پلاک 21، کدپستی: 1967917593

تلفن: 22015131 فکس: 22058852

E-mail: info@rasoolzadeh.co , omid.kiavar@rasoolzadeh.co

www.rasoolzadeh.co

سامان تابش امید

صنایع پزشکی
سرما بهبود
سپنتا
SBS Medical Ind.

دانش بنیان

TARA
Cooling Cap
تارا
کلاه سرد کننده

Model : SBChemoPlus

Scalp cooling device to avoid or reduce
chemotherapy induced alopecia
کلاه سرد کننده جهت جلوگیری
یا کاهش ریزش مو ناشی از شیمی درمانی

صنایع پزشکی سرما بهبود
اولین دارنده پروانه ساخت دستگاه
کلاه سرد کننده از وزارت بهداشت

IMED
National Medical Device Directorate IR.IRAN

مشهد|میدان بوعلی|پژوهشکده بوعلی| مرکز رشد فناوری سلامت

۰۵۱-۳۵۰۱۵۰۲۳ ۰۹۱۵ ۰۹۸ ۹۰۴۷ www.sbmed.ir

info@sbmed.ir sbmed.ir sbmed.ir

ALMETRA®

Pemetrexed (100 mg - 500 mg)

Cedal

Creativity
Empowerment
Development
Agility
Leadership

Build A Treatment Strategy With Extended Survival

Start with Almetra®
Stay with Almetra®

The available Generic form of Pemetrexed with FDA approved API.

Our Products:

- ALMETRA® (Pemetrexed)
- GEMCIMAX® (Gemcitabine)
- PACLEX® (Paclitaxel)
- OXALAN® (Oxaliplatin)
- TEOTAXOL® (Docetaxel)
- CAREPTIN® (Carboplatin)
- VELBORTE® (Bortezomib)
- NECIL® (5FU)

Cedal
Thinking of Patients

501, No. 145, 16th St. Kouye Nasr (Gisha) St.
+98 21 8619 0521
www.CEDALCO.com

CEDAL_CO
company/cedal-co/

GCC
GISO.CO

کلاه سرد
گیسو

تنها دستگاه با قابلیت
سرمایش تدریجی جهت آسایش بیمار
این قابلیت باعث جلوگیری از سر درد ناشی از سرمای کلاه می‌شود

خدمات پس از فروش و ضمانت
دارای ۱۸ ماه ضمانت و ۵ سال خدمات پس از فروش
فقط ۴۸ ساعت از درخواست تا حضور متخصص در هرکجای ایران

- دستگاه های فعال در مراکز متعدد سراسر کشور
- کارکرد در دوحالت اتوماتیک و دستی
- طراحی کاربر پسند

دارای گواهی‌نامه
ثبت اختراع
139850140003008886

دارای پروانه‌تولید از سازمان
غذا و دارو
irc:31805022

۰۳۱۳۲۲۴۱۸۳۵
GISOCOLINGCAP@GMAIL.COM
WWW.GISOMED.IR

شرکت داروسازی
سبحان انکولوژی

با بیش از ۱۰ سال سابقه در تولید داروهای شیمیایی ضد سرطان
یکی از بزرگترین تولیدکننده های داروهای ضد سرطان در خاورمیانه

Sobhan Oncology
Keeping Hope Alive

Erica Pharmed
Leading the way

ANNUAL CONGRESS OF **CLINICAL ONCOLOGY**

2-4 FEB 2023

TEHRAN, OLYMPIC HOTEL

SANDOZ A Novartis Division

Discover new ways to improve and extend people's lives*

*www.sandoz.com/about-us/who-we-are

01/2023/ONCO-AD/001/PM

NAVELBINE® Oral
vinorelbine

RIGHT FROM THE FIRST LINE

AN EFFECTIVE
ORAL CHEMOTHERAPY
TO START WITH††

Recommended by International Guidelines†

NCCN
ASCO
ESMO/ABC5

*** NAVELBINE® Oral is indicated as a single agent and in combination chemotherapy for the treatment of Non-Small Cell Lung Cancer and Metatstatic Breast Cancer**

Navelbine Oral SmPC: **August 2021**
Navelbine IV SmPC: **August 2021**

For more detailed information about the product, refer to the complete SmPC by scanning the above QR code

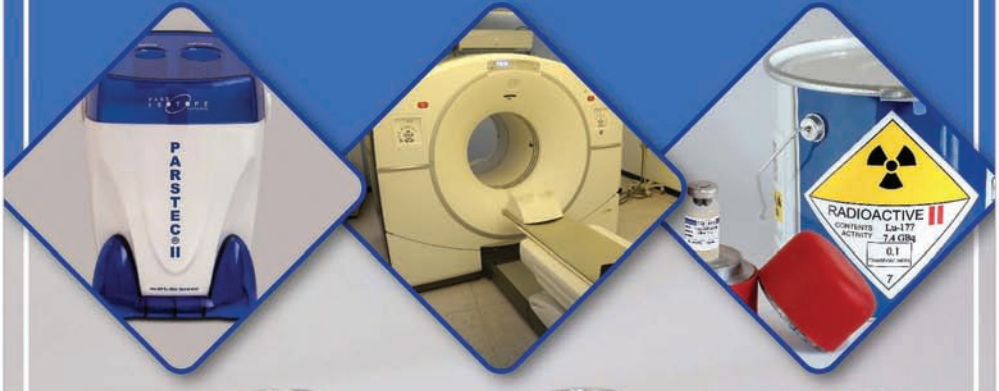
† ASCO Guidelines for MBC, Mey et al. J Clin Oncol 2022.
ASCO Guidelines, Stage I to IIIA Completely Resected NSCLC. Kris et al. J Clin Oncol. 2017/ASCO Guideline Rapid Recommendations Update. Pisters et al. J Clin Oncol 2022; V 40, Issue 10, 1127-1129.
ASCO **Living** Guidelines, **Therapy for** Stage IV NSCLC Without Driver Alterations. **Singh** et al. December **2022**
ASCO Living Guidelines, Therapy for Stage IV NSCLC With Driver Alterations. **Singh** et al. December **2022**
ASCO Guidelines, Management of Stage III Non-Small-Cell Lung Cancer. ASCO Guideline. Daly et al. J Clin Oncol. 22 Dec 2021
ESMO Guidelines, 2021 Early and LA NSCLC e-update in referral to Postmus et al. Ann Oncol (2017) 28 (suppl 4): iv1-iv21
ESMO Clinical Practice Guidelines, Metastatic non-small cell lung cancer: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. Originally published in 2018 (Planchard et al.) - Ann Oncol (2018) 29 (suppl 4): iv192–iv237. Approved by ESMO Guidelines Committee: Feb 2022
ESMO Clinical Practice Guideline MBC, Gennari et al. Ann Oncol. 2021.
NCCN Clinical Practice Guidelines in Oncology, Breast Cancer. V 4. 2022. **June 21**, 2022
NCCN Clinical Practice Guidelines in Oncology, NSCLC V1. 2023. December 22, 2022

†† As proven in clinical trials

Pierre Fabre Oncology
A Pierre Fabre Médicament division

PARSISOTOPE

The only supplier and manufacturer of diagnostic and therapeutic radiopharmaceuticals and radiopharmaceutical kits in IRAN



PARS ISOTOPE company