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Imam Reza General Hospital Newsletter

Tabriz University of Medical Sciences

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Tabriz University of Medical Sciences, Tabriz, Iran

Imam Reza General Hospital, Tabriz University of Medical Sciences, Tabriz, Iran

In this issue we read:

An Overview of the Events of the Center, the Articles of the Respected Professors and the International Educational Programs

Opening of the Second Phase of the Emergency Department at Imam Reza General Hospital in Tabriz, Iran

• **Mojtaba Mohammadzadeh**
Director-In-Charge's Message
Assistant Professor of Anesthesiology and Intensive Care Medicine
Dean of Imam Reza Generel Hospital, Tabriz, Iran

Fortunately, the second phase of the emergency department at Imam Reza general Hospital in Tabriz has become operational. With the launch of this expansion project, 2,000 square meters have been added to the hospital's emergency room, significantly increasing its capacity. The new department includes sections for cardiopulmonary resuscitation, outpatient services, imaging, andclinical laboratory, enhancing patient care with these additional facilities. Notably, the creation of the outpatient department will help reduce overcrowding in the emergency room. Another key feature is the installation of a CT scan machine. The laboratory and post-resuscitation care units are also crucial components of this expansion. Finally, heartfelt thanks are due to the University chancellor and the Vice chancellors for Treatment and Resource Management and Planning for their vital contributions to the establishment of this department.

Congratulations to Prof. Masoud Pezeshkian

We extend our congratulations to Prof. Masoud Pezeshkian, professor of Cardiac Surgery at Tabriz University of Medical Sciences, on being elected as the ninth President of Islamic Republic of Iran. This significant and valuable choice reflects the integrity and influence of Tabriz University of Medical Sciences in the country's most important executive branch.

Congratulations to Prof. Shahram Dabiri

We extend our congratulations to Prof. Shahram Dabiri, professor of Nuclear Medicine at Tabriz University of Medical Sciences, on his appointment as Vice president for parliamentary affairs of Islamic Republic of Iran and wish him success from God.

Happy Doctor's Day

Happy anniversary of Avicenna(Ibn Sina) and Doctor's Day to the diligent and dedicated doctors of Imam Reza General Hospital, Tabriz, Iran.

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Professor of Anesthesiology and Critical Care, Subspecialty in Intensive Care Medicine (ICM), Clinical Fellowship in EBM, Fellowship in Trauma Critical Care and CPR
Deputy Dean for Education and Research, Imam Reza General Hospital, Tabriz, Iran

The roster of politically engaged physicians includes notable figures such as Che Guevara. In Iran, the intersection of medicine and politics has been significant, with figures like Ibn Sina serving as prominent examples of medical professionals who also held governmental roles. The Qajar period marked the onset of formal medical education in Iran, where medical knowledge began to permeate political understanding and discourse. During the initial Pahlavi era, physicians actively sought to shape political landscapes by engaging directly in the political arena, laying the groundwork for robust educational and health infrastructures. The Islamic Revolution caused a change from previous technocrats towards new elite groups, including doctors who assumed high-level managerial positions. From 1906 to 1978, only two out of 39 Iranian prime ministers were physicians, accounting for just 6.8%. However, today, the realms of medicine and politics are increasingly interconnected, so that in the twelfth term of the Islamic Council, twenty representatives came from medical backgrounds. Physicians serving in the United States Congress represent a relatively small proportion of the legislative body. Over the last half-century, there has been an increase in the number of physicians in Congress, rising from five in 1990 to fourteen in 2017. This trend may be attributed to escalating healthcare expenses and heightened discussions surrounding healthcare reform in the United States. Physicians in politics are uniquely positioned due to their ability to process extensive information rapidly and draw critical insights. Similarly, the training that doctors receive to listen carefully before gathering and analyzing information is applicable in making informed political decisions. Our professional ethics should guide our political engagements. In the realm of evidence-based decision-making, a physician must organize their information and by adopting a specific mental process, seek out the knowledge required to substantiate the outcome of their decision. Similarly, in the context of policy-driven medicine, the conscious, transparent, and judicious application of the most relevant and current evidence is crucial in shaping decisions. Moreover, science should underpin policy just as it does clinical practice. As we fight to defend the vulnerable, we must demand access to safe housing, clean air, appropriate nutrition and effective education for all members of society. In addition, we need to ask political leaders to recognize health care as a human right. Ultimately, scientists form an integral part of society, therefore there is a need to engage more with them on both the political and social fronts. At the end, we welcome the election of Professor Masoud Pezeshkian, a distinguished Professor of Cardiac Surgery at Tabriz University of Medical Sciences, as the ninth president of Iran. We extend our best wishes for his success in advancing the Islamic Republic of Iran.

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International Educational Program:

Radioligand therapy in Nuclear Medicine for Cancers (Thyroid,Prostate and Neuroendocrine)

• Esmaeil Gharepapagh
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I am Dr. Esmaeil Gharepapagh, the head of Imam Reza General Hospital's iodine therapy ward. I am a nuclear medicine specialist, a PET/ CT fellow, and associate professor at Tabriz University of Medical Sciences.
In this program I will introduce you to our courses on radiodrug therapy (theranostic) and radiation protection.
I will provide an overview of what will be covered in these courses. Our clinical courses aim to two aspect of radiodrug therapy: 1) radioiodine therapy and
2) Lu therapy.

•A brief description of the inpatient treatment department and its activities:
This ward was officially opened in November 2023 by a benefactor who started construction in 2018. This ward has been equipped by a benefactor and Imam Reza General Hospital in Tabriz, and it occupies more than 800 square meters. This center is currently the country's largest and most advanced nuclear medicine treatment facility. A total of 10 VIP rooms are available, equipped with all amenities and medical care for patients suffering from thyroid cancer for ablation of thyroid tissue following surgery, iodine131-radiodrug treatment for local and distant metastases, and a dedicated room is available for patients suffering from metastatic castration-resistant prostate cancer and some neuroendocrine cancers by 177Lu-PSMA and 177Lu-DOTATATE respectively. The facility also includes a green space for patients, a hot lab, storage, 3 septic tanks with a volume of over 30,000 liters with a fully digital display, as well as a remote communication system with patients in audio and video.

• As regards the medical and nursing personnel in the treatment ward:
An experienced team of nuclear medicine specialists and nurses manages the center. A medical physics specialist with a nuclear medicine orientation and several nuclear medicine technologists' work together to comply with (or follow) the radiation protection regulations, monitor ward and patient dosimetry, and radiodrugs consumption. Radioactive waste regulations and radiation protection guidelines are strictly followed in this ward. These guidelines will be communicated to you by the physicist's colleague.

• How to visit and prescribe radiodrugs to the patients of this ward:
A nuclear medicine specialist examines and consults patients referred to this ward by other specialists and subspecialists after completion of the case, carefully analyzing the patient's documents including pathology sheets, blood tests, ultrasounds, and scans. Then calculation and determination of the therapeutic dose for radiodrugs, consists of iodine131- and lutetium-177-PSMA are performed. Following this, an educational video will explain how to receive radiodrugs and how patients behave in quarantine rooms. Ward nurses also explain detailed explanations to patients. Then Patients are directed to their rooms and are placed under the care of ward doctors and nurses during their quarantine period after receiving radiodrugs. For iodine therapy, this period lasts 48 hours, while for Lu therapy, it lasts 6 to 24 hours. After this period, following the physician's visit, which includes nurse calls and CCTV cameras, dosimetry by the physicist, and explanations for protective care at home, the patients are discharged.

• Regarding communication and cooperation with other countries and nuclear medicine centers:
Our course might last from one to two weeks to even three months. This nuclear medicine division is ready to welcome other colleagues from related disciplines in iodine therapy, Lu therapy, and even treatment with 131I-MIBG for neuroblastoma on future, principles of radiation protection, and nursing in nuclear medicine treatment departments, and therefore specialist and resident colleagues. Nuclear medicine and medical physics colleagues, and also nuclear medicine thernostic nursing care personals from other countries, especially neighboring countries, can use the short-term courses of this center for academic training or even as an observers, and it will be our pleasure to serve these loved ones.

International Educational Program:

IBD (Inflammatory Bowel Disease)

• Kourosh Masnadi Shirazinezhad
Associate Professor of Gastroenterology and Hepatology, Tabriz University of Medical Sciences ,Tabriz, Iran
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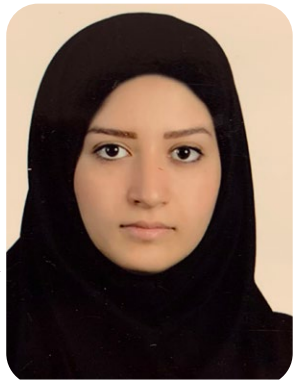
I am Kourosh Masnadi Shirazinezhad associate professor of Gastroenterology &Hepatology at Tabriz University of Medical Sciences. My favorite field is in Gastroenterology Inflamatory Bowel Disease (IBD). In GE department we have a GI disease ward and an Affiliated Endoscopy ward. We have also multiple subspecialty clinics like IBD clinic, Cirrhosis clinic for celiac disease and Hepatobiliary clinic. In GE department we have the possibility to offer short-term GI training courses to those who are interested and eligible. We can offer these courses in English, Turkish and Persian languages. The minimal qualification to enter these courses is to have a degree in internal medicine. These courses are in three packages:
FIRST: A short - term training course in General Gastroenterology including preliminary training about GI patients visit and observation of upper GI endoscopy and total colonoscopy .
The duration of this course is about 12 weeks .
SECOND: As imentioned before we have a highly specialized IBD Clinic at Imam Reza General Hospital in which we provide standard diagnostic & therapeutic services for this category of GI diseases, based on latest international guidelines.
In this clinic we can offer a short-term training course on diagnosis and management of IBD patients.
The duration of this course is about 12 weeks and includes visit of IBD patients (outpatient and inpatient), comprising different aspects of diagnosis and treatment of these patients and especially managing of their different sever complications.
THIRD: Finally we can offer a short- term course for observation small bowel endoscopic procedures including Push-Enteroscopy and Balloon-assisted Enteroscopy, especially Single balloon Enteroscopy. The median duration of these courses are approximately 8 weeks. Our courses aim to introduce the trainees to GI ward and its inpatients and outpatients and different GI procedures performed for them. Thoes who are eligible and interested in taking the mentioned courses can contact the Deputy of research and Education unit at Imam Reza General Hospital, Tabriz, Iran or my personal E.mail directly.

Oral cancer



• Maryam Hoseinpour Sarmadi
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Oral cancer is one of the six most common malignancies in Asia. Approximately %95 of oral cancers occur in people older than 40 years, and the average age at diagnosis is approximately 60 years. In most cases, this lesion involves the lateral border and base of the tongue. People who have had cancer before are at high risk of developing a second oral cancer. New knowledge about oral cancer has increased in recent years, including information on current etiological and epidemiological risk factors, recommendations for prevention, methods of recognition, advances in the treatment of malignant diseases, and the importance of survival for possible recurrence of the primary cancer or secondary new cancers . The etiological risk factors of this disease include the accumulation of genetic changes and the duration of exposure to initiating and promoting factors, including chemical and physical stimuli, hormonal effects and reduced immunity. Epidemiological studies have shown that more than %80 of patients with oral cancer were smokers, and according to studies, all forms of alcohol are involved in the etiology of this lesion. Other factors include the role of human papilloma virus (HPV) in oropharyngeal carcinoma. Consumption of fruits and vegetables due to the antioxidant effect of vitamin C and vitamin E and flavonoids is associated with a decrease in the risk of oral cancer, and diets with a high amount of eggs, butter and certain types of meat are associated with an increase in the risk of this disease, while Vitamin A may have a protective role in oral cancer. Early identification of these lesions is a constant goal, so taking a proper history of the patient and a complete examination of the mouth, head and neck is a necessary condition. The definitive test to diagnose these lesions is biopsy and histopathological examination.
Several auxiliary methods for oral examination to detect these lesions include: optical technologies, staining of living tissues using toluidine blue solution, radiographic imaging and computer-aided cytology preparation from oral biopsy brush samples. It has also been suggested that molecular markers from tissue samples help in identification and evaluation. The main goal of treating these lesions is to improve the patient with cancer and the choice of treatment method depends on the type of cell, the degree of differentiation, the location and size of the primary (continue on next page)

(Dr. Maryam Hoseinpour Sarmadi cont.) lesion, the condition of the lymph nodes, the presence of local bone involvement, the ability to obtain a sufficient margin for surgery and the presence or Absence of metastases. Treatment decisions are also influenced by the patient›s ability to maintain oropharyngeal function, including speaking, swallowing, aesthetics, and the patient›s medical and psychological status. In addition, available support during treatment, thorough assessment of potential complications of treatment, experience of the oncologist›s team, personal preference, and patient cooperation influence treatment decisions.

International Educational program:

Principles of radiation protection in the iodine therapy ward

• **Sahar Rezaei**
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I am Sahar Rezaei, assistant professor of medical physics in the Department of Nuclear Medicine at Tabriz University of Medical Sciences.
Since 2022, I have been working in this department as a nuclear medicine physicist. It is a pleasure to be here today. Contributing to this international educational program is an honor for me.
Let me share with you the role of the nuclear medicine physicist within the Nuclear Medicine Department.
Nuclear Medicine physicists are essential members of multidisciplinary clinical teams involved in health care provision for diagnostic and therapeutic purposes.
As part of their clinical responsibilities, they ensure clinicians use all radioactive materials and equipment accurately and safely.
In addition to calculating the radioactive dose and overseeing radiation-safe treatment procedures, the Nuclear Medicine Physicist supports patient care and provides advice for patient care, discharge, and public safety.

Introduction:
In this video, I will introduce you to our course on radiation Protection in the nuclear medicine ward. I will provide an overview of what will be covered in the course and what you can expect to gain from taking it.

Could you please provide a brief description of the training program?
Our course aims to cover two aspects of shielding calculations: the design and calculation of all spaces in the inpatient ward and the design and calculation of the wastewater system. By the end of this course, students will be able to design an iodine therapy ward that includes all aspects of radiation protection. This course is designed for nuclear medicine physicist.

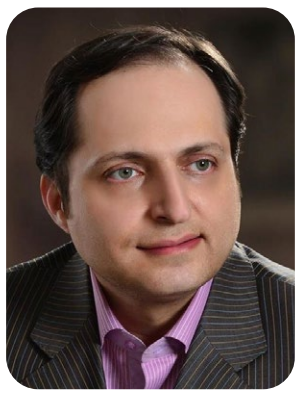
Course overview:
This course will take 2 weeks. Students will be expected to spend approximately 10 hours per week on course work.

What makes your course for iodine therapy design unique regarding radiation protection?
The American Thyroid Association's (ATA) Shielding Design and calculation methods for iodine therapy centers will be used to develop a treatment ward, including determining the effective half-life and the gamma constant, as well as the thyroid uptake ratio and radiation dose rates. Several calculations will be considered to ensure that radiation at a distance of one meter from all walls is completely safe. Furthermore, advanced wastewater storage facilities will be designed.

Could you please provide more information about advanced wastewater storage facilities?
Radioactive wastewater storage facilities are used to store water that contains radioactive materials. These facilities allow for the capture, treatment, and disposal of wastewater in a safe and environmentally responsible manner. Septic calculations are based on the requirements of the Atomic Energy Organization, and volume calculations for the tanks assume 30 patients each week, with 200 millicuries of prescribed activity per patient. Three concrete septic tanks with a total capacity of more than 32,000 liters will be designed for this system and will be monitored by electronic sensors through a digital monitoring system.

International Educational Program:

Hypothermia for Cardiac Arrest and Severe Trauma Brain Injury Patients



• **Hassan Soleimanpour**
Professor of Anesthesiology and Critical Care, Subspecialty in Intensive Care Medicine (ICM) Tabriz University of medical sciences, Tabriz, Iran

I am Hassan Soleimanpour, Professor of Critical Care Medicine. My field is Airway management, Acute pain management, CPR, Therapeutic Hypothermia and EBM. Actually, I have been working as an emergency medicine at the emergency department of Imam Reza General Hospital in Tabriz, since 2005. In addition to my role as an Intensivist, I also hold positions as the deputy dean for research and education at Imam Reza General Hospital and as the head of the ICU at the same facility. Also, I am the chief editor of International Journal of Aging (IJAging) and the International Journal of Drug Research in Clinics (IJDrug). I also have completed two fellowships in the fields of Evidence-Based Medicine and Trauma Critical Care, as well as Cardiopulmonary Resuscitation (CPR) from the Adelaide University in Australia and the Vienna University of Medical Sciences, respectively.
It is better I mention that, I have almost 130 articles in PubMed and Scopus databases, 2 chapter books in international publisher and 5 books in academic national publisher. In addition, I am a member of 3 research centers including: Emergency and Trauma care research center, Medical Philosophy and History Research Center and Road traffic research center. I am the Head of the proposed WHO Collaborating Centre and the principal investigator (PI) for the WHO research project related to Covid-19. Additionally, I am honored to say that I am the main editor of this international educational programs at Imam Reza General Hospital in Tabriz and It's my pleasure be here as one of the lecturers.

What's your course? Could you please tell us about your course?
It is worth mentioning that the father of therapeutic hypothermia is Peter Safar, who was born in Vienna. He founded the first international research center for CPR and promoted the protocol of hypothermia for several years. Therapeutic hypothermia protocol was published in the New England Journal of Medicine in 2002 and later adopted as an AHA (American Heart Association) guideline, recommending it for all patients with cardiac arrest in coma. My course focuses on therapeutic hypothermia treatment for patients with cardiac arrest and severe traumatic brain injuries. I should mention that my experience in this field dates back to 10 years ago when I participated in a fellowship program at Vienna University of Medical Sciences, Vienna, Austria. There, I got familiar with a special hypothermia protocol used for cardiac arrest patients in the emergency department of Vienna. I was wondered by this unique protocol, so when I returned to Iran, I tried to develop and implement it here. Also, I made several lectures about this protocol in the large number of hospitals in Iran. In addition, I produced 2 educational CDs about this protocol in 2012.

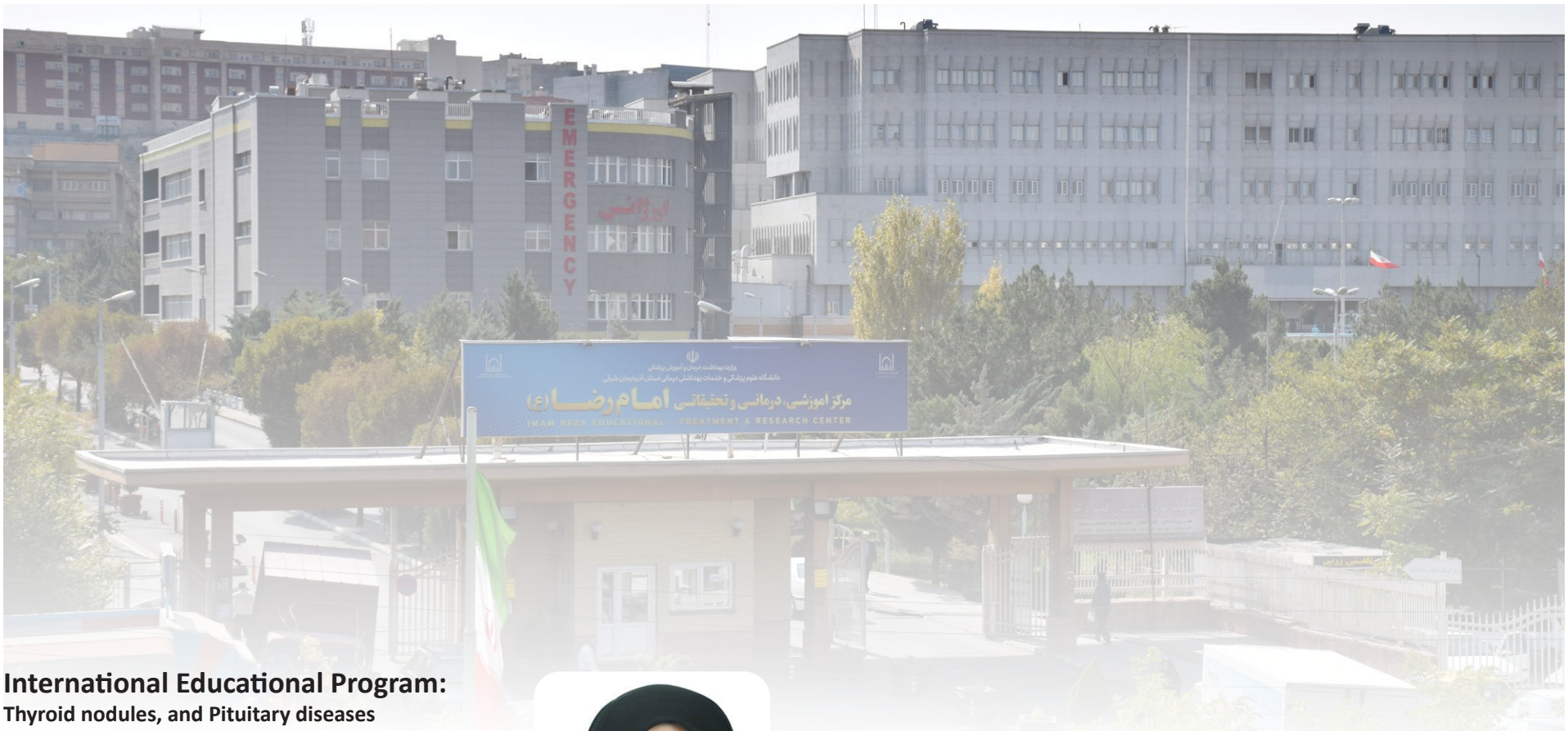
Do you have a team?
Yes, of course I do.

Could you talk about your team in detail?
My team consists of Prof. Ata Mahmoodpoor, Professor of Critical Care Medicine, and Dr. Mojtaba Mohammadzadeh Lame, Assistant Professor of Critical Care Medicine.

What are the objectives and goals of your course?
By the end of this course applicants will be able to induce hypothermia protocol for patients with cardiac arrest and sever TBI (traumatic brain injury). The protocol stages include inducing hypothermia, using barbiturates, and maintaining target temperature in these two types of diseases. In cardiac arrest patients, the protocol will continue for 24 hours, and in severe TBI patients, it will continue for 72 to 96 hours. The method we choose for cooling patients is surface cooling induced by the company BARD's hypothermia devices (Arctic Sun). Brain and cardiac respiratory monitoring will be performed during hypothermia protocol.

How long is your course?
It will take 4 weeks in person and 8 hours online. This course is suitable for those who are emergency Medicines, anesthesiologists, Intensivists, Internists and eligible nurses.

Are there any other things you want to add?
I hope that with the distribution of this protocol around the world, more patients will return to the arms of their families, and I request the health authorities to help us in this important and benevolent matter. Finally, I would like to thank Professor Wilhelm Behringer, who played a very important role in teaching me this protocol at the Vienna AKH General Hospital.



International Educational Program:

Thyroid nodules, and Pituitary diseases

• Sevil Ghaffarzadeh Rad
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I am Sevil Ghafarzadeh Rad. I am working as an Endocrinologist and Assistant Professor of the Internal Medicine Department at Tabriz University of Medical Science. I graduated as a general physician from Tabriz University of Medical Science in 2010. Then I was admitted in the specialty of internal medicine and finished it in 2014. Later, I continued my education in endocrinology subspeciality in 2018. I ranked third in the national internal medicine subspecialty and endocrinology board exam. Furthermore, I have completed the Evidence-Based Medicine Fellowship from JBI Australia. I am expert in thyroid sonography, a non-invasive imaging technique that allows us to visualize the thyroid gland and assess its structure and function. This helps us identify any abnormalities or nodules that may require further attention. Additionally, I am proficient in fine needle aspiration, a procedure used to obtain tissue samples from the thyroid gland for further analysis. This technique plays a crucial role in diagnosing thyroid nodules and determining whether they are benign or require further evaluation.

My course on thyroid nodules will delve deep into the intricacies of diagnosing and managing these common thyroid gland abnormalities. Through a combination of interactive lectures, case studies, and hands-on training, you will gain a comprehensive understanding of thyroid nodule evaluation, ultrasound imaging, and the nuances of fine needle aspiration.

Speaking of fine needle aspiration, our dedicated course on this procedure will provide you with the essential skills and confidence to perform it effectively and safely. You will learn about the indications, contraindications, technique, and interpretation of FNA, enabling you to contribute to accurate diagnoses and patient care. Furthermore, our course focusing on hypophyseal disorders. Participants will have the opportunity to delve into the pathophysiology, diagnostic methods, and management strategies related to conditions including pituitary tumors, hypopituitarism, hyperpituitarism, and more.

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