Tabriz University of Medical Sciences, Tabriz, Iran

Imam Reza General Hospital Newsletter

Tabriz University of Medical Sciences

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

In this issue we read:

An overview of the events of the center and the articles of the respected professors

Message of the Dean of Imam Reza General Hospital to the 2nd Tabriz Virtual Patient Safety and Medical Education International Congress (Tvpm)

• **Mojtaba Mohammadzadeh**
Assistant Professor of Anesthesiology and Intensive Care Medicine
The head of Imam Reza General Hospital, Tabriz, Iran and the Scientific Editor of the congress

Patient safety is a branch of health care. Increasing the complexity of health care and increasing patient injuries in health centers leads to emerging branch of patient safety. When we talk about patient safety, it is about the approaches taken by hospitals and healthcare organizations to protect patients from medical mistakes, injuries, accidents, and infections. Patient safety is the main priority of almost all hospitals around the world. In this regard, it is our pleasure to announce that the 2nd Tabriz Virtual Patient Safety and Medical Education International Congress (Tvpm) from 25-21 October, 2023 will be held in Imam Reza educational, treatment and research center, the largest referral center in the northwest of Iran. The aim of this congress is upgrading the education, providing safe services, and improving the knowledge of medical education and treatment practitioners in order to find the roots of issues and problems and providing managers and policy makers with appropriate measures to solve patient safety issues and problems related to medical education. We hope to present novel scientific and research findings in various fields of patient safety and medical education, and also we appreciate the presence and participation of professors, scholars, experts and students in this congress.

Message of the Chancellor of Tabriz University of Medical Sciences to the 2nd Tabriz Virtual Patient Safety and Medical Education International Congress (Tvpm)

• **Prof. Bahman Naghipour**
Chancellor of Tabriz University of Medical Sciences, Tabriz, Iran and Dean of the Congress

systems in which the health care providers and care receivers are humans, and it is clear that humans with all their complexities can make mistakes. Therefore, patient safety in educational and treatment centers has become a global problem that has affected the quality of care. Because of the presence of students in educational and treatment centers, the possibility of medical mistakes has been increased. Therefore, it is the main responsibility of health agents and managers to reduce the rate of mistakes by making right decisions. Hence we have decided to bring together experts in the field of medical education and treatment from several universities in Iran and other countries including, Canada, Australia and the World Health Organization in various fields such as clinical professors, ethics, medical education, and forensic medicine, and nursing to reach a comprehensive consensus and solutions to mitigate the occurrence of medical mistakes. We hope that with the help of God and participation of professors and health care providers, we have a productive and prolific congress ahead.

A Brief Report of Dr. Hamidreza Namazi's lecture at Imam Reza General Hospital, Tabriz, Iran

• **Hamid Reza Namazi**
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Dr. Hamidreza Namazi, a faculty member of Tehran University of Medical Sciences, who is a former graduate of the medical school of from Tabriz University of Medical Sciences gave two lectures with the title "The Role of Philosophy and Ethics at the Boundaries of Medicine" in the conference hall of Imam Reza General Hospital, Tabriz, Iran.

In the first lecture, which was focused on a philosophical reflection on the relationship between health and disease, Namazi discussed the historical background of the emergence of philosophy of medicine and reflected on the concept of disease from Galen, Greek physician, to the present. He explored five relationships (continue on next page)

The representative of the World Health Organization, Dr. Seyed Jafar Hossein in Iran:

Imam Reza General Hospital, Tabriz, Iran will receive the WHO[1] logo and we are sure that this center will become a collaboration center with WHO.

1. World Health Organization

Establishment of the Country's First Hospital Incubator Center in Imam Reza General Hospital, Tabriz, Iran

• **Hassan Soleimanpour**
Editorial Message
Editor in Cheif
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 incubator center of Imam Reza general Hospital, Tabriz, Iran has been established in October 2023 with the efforts of the honorable director of health technology development of deputy of research and technology of Tabriz University of Medical Sciences, the honorable vice chancellor for research and technology of Tabriz University of Medical Sciences and the appreciable supports of the honorable Dean of Imam Reza general Hospital, Tabriz, Iran. The goals of this center include financial, service and spiritual support for the ideas and new technologies that are represented by faculty members, hospital personnels, student teams and companies. It is worth mentioning that there are no age and education restrictions. This growth center provides opportunities to commercialize ideas, benefits from new information, essential consultations, services and novel facilities. The main mission of this growth center is a kind of supportive cycle for new ideas and knowledge to convert them into products and technological services that can be commercialized and offered to the market. In this regard, this growth center is a unit that facilitates the flow of knowledge and technology among research and development institutions, private companies, inventors and innovators and assists their connection with the market. In general, company growth centers (incubators) are in connection with recently established small and private companies. Incubator is a term that is used both in agriculture and hospitals. In hospitals, neonates who are born prematurely are kept in special incubators to use oxygen and suitable nourishment to be survived. Incubators are also derived from the same concept, which means that private and start-up companies are placed in a group called incubator to receive support for three to five years and then after this period they will be prepared to start their specific activities at the society level.

Contents

(Hamid Reza Namazi cont.) between philosophy and medicine: the approach of philosophy in the perception of the general public, armchair philosophy, generalization in philosophy regarding human concerns, and the precedence of philosophical method over empirical method as a threat to systematic reflections in the philosophy of medicine.

The significance of starting the discussion with a historical account lies in the fact that resolving theoretical discussions and debates in medicine, as with any other field, can only be achieved by fully understanding the historical context of the issues. It's interesting to see how philosophy and ethics play a role in the realm of medicine. Philosophy helps us delve into the fundamental questions about health and disease and provides a framework for ethical decision-making in medical practice. By examining the historical roots of these concepts, Dr. Namazi highlights the significance of understanding the development of ideas in medicine and the importance of thoughtful reflection in addressing medical challenges. Dr. Namazi then used a dialectical analysis framework to discuss dualities such as care and treatment, continental philosophy and analytic philosophy, medical ontology and medical epistemology, medical conservatism and medical radicalism. He raised questions such as whether diseases are social constructs or merely the discovery of biological dysfunctions, and whether all forms of suffering, illness, and sickness should be labeled as diseases. This led to a new discussion under the title of medicalization. Medicalization refers to the expansion of medicine into areas that are not traditionally considered part of the medical domain. Examples of medicalization include the medicalization of beauty, aging, crime, anxiety, and love. Since the second half of the twentieth century, medicalization has been a significant topic of theoretical contemplation in medicine and has gained attention from various scholars in the fields of sociology, philosophy of medicine, anthropology, and more.

Namazi critiqued the biopsychosocial model and the World Health Organization's definition of health as complete physical, mental, and social well-being. He considered this approach as a fertile ground for problematic medicalization and disruption in the concepts of health and disease. In his critique, he identified novel approaches to challenge this model.

It's fascinating to explore the intersection of philosophy, social sciences, and medicine in understanding the complexities of health and disease. Dr. Namazi's discussions shed light on the philosophical underpinnings and social implications of medical practices, encouraging us to critically analyze the boundaries and consequences of medicalization.

In the second lecture, Dr. Namazi discussed problem-solving patterns in medical ethics, using a dialectical analysis framework to explore topics such as principled bioethics and narrative bioethics.

The discussion began with a detailed examination of how principled ethics is applied in applied ethics and the various models of principled bioethics in medical ethics. The analysis and critique of different models, including single, dual, triple, quadruple (the most well-known model being Beauchamp and Childress' four principles), six, seven, and ten principles, were then addressed.

The importance of this discussion lies in the fact that the general understanding of medical ethics often tends to focus only on one of these principled systems, and researchers perceive principled bioethics as limited to that particular system.

The discussion then turned to the relationship between argumentation and emotivism in resolving ethical issues in medical ethics. Furthermore, the significance of reflective equilibrium in balancing principles, narratives, and contextual conditions for problem-solving was emphasized. Another topic thoroughly examined in this session was the attention given to common cognitive errors in ethical reasoning in medical problem-solving. Cognitive errors such as anchoring, overgeneralization, the Forer effect, ambiguity bias, and omission bias were discussed. Additionally, the importance of psychological aspects in moral ethics and the neglect of such aspects in the field of medical ethics were emphasized.

The session also highlighted the importance of concepts like the Johari window in understanding the distinction between ethos and ethics, the distinction between relationship and communication, and the significance of moral luck in the ethical decision-making process.

These discussions provide valuable insights into the diverse approaches and considerations involved in medical ethics. By exploring different problem-solving patterns and understanding the potential cognitive biases in ethical reasoning, we can strive to make more informed and ethically sound decisions in medical practice.

Rheumatic diseases: the importance of early diagnosis

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Rheumatism is a collection of inflammatory conditions affecting the anatomical components comprising the musculoskeletal system, which serves as the motor system of the human body. Most of these conditions are progressive and systemic, making them difficult to treat and ultimately chronic. The early detection of chronic diseases is crucial due to the potential for complications and incapacity that commonly arise in affected individuals.

Diagnosing any medical condition is a pivotal undertaking in which integrating scientific and artistic elements assumes a primary and indispensable role. In other words, the physician must be aware of the most recent medical advancements, particularly in his specialty, but this is insufficient. The art or ability to conduct a thorough and accurate clinical examination is unquestionably essential, as it allows the physician to review all of the patient›s clinical findings and draw a rational conclusion based on the patient›s assertions and concerns. The «art» of rationally selecting whether paraclinical requests are necessary for each patient should be used by the doctor as well. This method usually solves the «diagnostic puzzle,» but if it doesn›t, a second look at the patient could help. A complete physical examination and review of the patient›s medical history will allow for an exact and «early» diagnosis. Naturally, the final diagnosis and the main etiological finding benefit from the request for and performance of essential and appropriate laboratory testing for each patient.

Early diagnosis is often a form of «secondary prevention.» A timely diagnosis and prescription of the appropriate treatments can prevent the disease›s progression and complications, thereby increasing the probability and likelihood of achieving a complete cure and eradicating the disease.

A doctor demonstrates a «high commitment» and greater empathy and generosity towards his patient when he tries to make an early diagnosis. A timely diagnosis enables the physician to begin efficient therapies on time and stop the disease›s progression. Additionally, it makes the patient feel more relaxed and prepared for the recommended therapies. Importantly, prompt treatment and early disease diagnosis save the patient›s life and reduce his expenses in most cases.

The question now is, what factors hinder timely disease detection?

• Delay in seeking medical attention, whether because the patient is unaware of the illness or its symptoms, cannot afford treatment, or does not live near a medical facility.

• Inadequacy or delay in diagnosing the disease at healthcare facilities due to the absence of a medical specialist or general practitioner.

• Delay in diagnosing and referring the patient to the proper medical facility.

A patient should not be subjected to unnecessary tests or diagnoses for early detection, as medical professionals should use caution. Instead, we should rely on our professional skills and abilities (as physicians) to achieve this objective, taking additional precautions during a thorough reexamination and collecting the patient›s medical history. In addition, physicians must use the least available paraclinical requests.

Early disease diagnosis aims to make scientific and logical endeavors to shorten the path of diagnosis as much as possible so that treatment can be initiated promptly. In other words, we have made time and financial savings to the patient›s advantage.

The doctor›s self-assurance in his clinical and laboratory findings at all phases of treatment is the most critical factor in reaching an early diagnosis.

A prompt diagnosis is essential in all of medicine, from internal medicine and surgery to gynecology and pediatrics. This significant point is valid across all specialized and ultra-specialized fields.

Many positive outcomes can be achieved with prompt diagnosis and the implementation of appropriate therapy:

• Protecting the patient from further infection and its devastating effects]

• Lessening the financial burden on patients and the public health system

• Facilitating a speedy recovery so that the patient can resume their routine as soon as possible

• Reducing or preventing disease-related mortality

Early diagnosis has many essential impacts on rheumatic disorders, including the following:

• Systemic lupus erythematosus (SLE)

• Accurate patient monitoring, efficient therapy, and prompt diagnosis

• Prevention of illness from spreading to the kidney, lung, and brain

The symptoms of vasculitis, such as giant cell arteritis or temporal arteritis in adults over 50, include a temporal headache that is typically sensitive and rough, a high ESR, impaired vision, and sudden blindness. Eye issues typically improve and disappear with prompt diagnosis and high-dose steroid therapy.

In inflammatory joint disorders, such as rheumatoid arthritis and spondyloarthropathies, such as ankylosing spondylitis (AS), and degenerative joint disorders, such as arthrosis, a timely diagnosis and control of the disorder can alter the prognosis and provide the patient with the opportunity for everyday life and level of activity.

The importance of early diagnosis of the most prevalent metabolic bone disease, osteoporosis, cannot be overstated. Bone fractures are the most significant fatal complication of osteoporosis, and they can be prevented by the timely application of all medicinal and non-medicinal remedies and by making all-out efforts to identify the underlying cause or causes.

The Outcome of a Scientific Journey

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The second international congress of the American College of Surgeons, Dubai branch was held on 9th10-th September at the Raffles Hotel, Dubai in 2022. I participated as speaker in this congress. The title of my lecture was endoscopic thyroid surgery which was performed by me for the first time in Iran and even in neighboring countries. My lecture at the first day of the congress was lasted 15 minutes in English in the format of case report with a surgical film. One of the important points of this lecture was the introduction of Tabriz University of Medical Sciences to the participants and performing a surgery which was performed by a thoracic surgeon that was very interesting for the board of directors .In the lecture, the details of thyroid surgery with the help of laparoscopic tools were explained on video. At the end of the lecture, the questions of the participants who were from England and India were answered.

Congratulations to Dr. Seyed Mohammad Salar Hosseini as the best general physician student from Tabriz University of Medical Sciences, Tabriz, Iran in the 2th national students› research and technology festival held at the closing ceremony of the 24th national and 10th international annual research and technology congress of Iranian medical sciences.

Nutritional care for patients requiring enteral (EN) and parenteral (PN) nutrition support

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Introduction: When patients cannot (such as dysphagia, head and face trauma, coma, respiratory failure, surgery, etc.) or will not (such as cancer, severe burns, heart failure, anorexia nervosa, etc.) eat enough to support their nutritional needs for more than a few days, nutrition support should be considered as part of the integrated care plan. Using the gastrointestinal tract (GIT) (EN vs. using PN alone) helps preserve the intestinal mucosal barrier function and integrity. In critically ill patients, feeding the GIT has been shown to attenuate the catabolic response and preserve immunologic function. Research shows less septic morbidity, fewer infectious complications, and significant cost savings in critically ill adult patients who received EN versus PN. There is limited evidence that EN versus PN affects hospital length of stay but an impact on mortality has not been demonstrated.

Nutritional assessment: To determine the risk of malnutrition in critically ill patients, it is necessary to use the Nutrition Risk Screening (NRS 2002) and/or NUTRIC Score for all patients admitted to the ICU. Nutritional support as soon as possible (within 24 to 48 hours after admission) is more beneficial for critically ill patients who score higher in these screenings.

Nutritional requirements: the best method to calculate the energy needs of critically ill patients is to use indirect calorimetry, and if it is not available, the range of 25-12 kcal along with 2.5-1.2 g/kg/IBW is recommended. There is evidence that caloric restriction along with high-protein diet in obese patients without negatively affecting the patient›s recovery process, preserves muscle reserves, mobilizes fat reserves and minimizes metabolic problems.

For short-term EN, nasogastric/duodenal feeding, and for long-term EN, gastrostomy or jejunostomy is used. To choose an enteral formula, the following factors should be considered: ability of the formula to meet the patient's nutrient requirements; caloric and protein density of the formula (i.e., kcal/mL, g protein/mL, mL fluid/L); gastrointestinal function; sodium, potassium, magnesium, and phosphorus content of the formula, especially for patients with cardiopulmonary, renal, or hepatic failure; form and amount of protein, fat, carbohydrate, and fiber in the formula relative to the patient's digestive and absorptive capacity; cost effectiveness of formula; patient compliance cost-to-benefit ratio. Clinicians often are concerned about nutritional adequacy, food safety of blenderized tube feedings (BTFs). Advantages of BTF may include cost effectiveness, health benefits from using whole foods, and ability to tailor the formula exactly to patient needs. The social bond between the caregiver who prepares the feeding (possibly from foods served to the rest of the family) and the patient also is cited as a strong use of BTF in long-term care facilities.

PN provides nutrients directly into the bloodstream intravenously. For short-term peripheral parenteral nutrition (PPN), and for long-term central parenteral nutrition (CPN) is used. In PN, solutions of amino acids, lipids and dextrose are used along with electrolytes.

The use of specific amino acids, fiber supplements and fructo-oligosaccharides, essential fatty acid supplements, as well as vitamins and minerals in addition to the basic needs, requires careful evaluation and follow-up of the treatment process, and in some cases the harms may be greater than their benefits. Considering the basic changes in the body organs in patients with heart, lung, liver and kidney failure, and as a result, the nutritional needs of these patients should be specially calculated and prescribed according to the patient›s condition. EN and PN complications must be carefully controlled and managed, and successful nutritional care as part of the routine treatment of critically ill patients must be designed and implemented individually for each patient and requires the cooperation of the physician, nurse, patient, and dietician.

Bedside Tracheostomy in the intensive care unit

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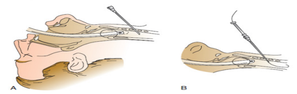
PDT (percutaneous dilatedtracheostomy) is a minimally invasive method that is performed by an intensivist in the ICU. In this method, the complications of transfer to the operating room and the cost are reduced. Indications for tracheostomy include: failed extubation, upper airway obstruction, and long-term mechanical ventilator, inability to clean secretions, severe brain trauma or cervicalspinal cord injury. Absolute contraindications for tracheostomy include: noninformed consent, inexperienced operator, infected insertion site, uncorrected coagulopathy. Relative contra indications of tracheostomy: difficult anatomy, unstablecervical cord, presence of pulsatile vessels at the insertion site, high PEEPand FIO2 requirements and large thyroid glands. Thetrachea begins at the lower edge of the cricoids cartilage and extends to thelevel of the carina. It consists of 18 to 22 anterior C-shaped tracheal ringslined by a posterior membranous wall. It starts anterior and midline in the neck below the cricoid cartilage and then it dives posterior in the mediastinum. The esophagus starts at the same level and lies at the left posteriorborder of the trachea. The thyroid gland is found anterior and lateral to the proximal trachea with the isthmus projecting apically at the level of the second or third tracheal ring. The structure associated with this procedure's deadliest complications is the innominate artery. It crosses the anterioraspect of the trachea in an oblique fashion inferior to the third or fourthtracheal ring. The initial measures before the procedure include: patient selection, check list including doctor, assistant, and nurse, there must be a surgeon in that center, bronchoscope, and ultrasonography to avoid vascular damage but its usefulnesshas have not been proven yet, tracheal tube, ambobag, and laryngoscope, differentsizes of tracheostomy, sufficient light and electrocautery. Step before starting the percutaneous tracheostomy procedure, hold tuble feeding at least 6-4 hours prior to procedure, hold anticoagulant appropriately, and keep FIO2at %100. Steps during the procedure include: A proper position for the patien with maximum neck extension, place bit block to avoid injury to teeth orbronchoscopy, ensure adequate sedated, deflate the TE cuff and withdraw ET under laryngoscopic vision until cuff is visualized just below cords, then reinflat the cuff, clean, drape the patient as per protocol, identify the site insertion. Infiltrate the skin with local anesthetic containing a vasoconstrictor, insert a needle through the second ring of the trachea and when the air is aspirated, it is confirmed by bronchoscopy, we insert a guide wire, we make a small cut from the side of the



guidewire and insert the first and then the second dilator, and then we insert atracheostomy, we look with a bronchoscope, we look at the connected ventilatorand the return volume, then we stitch the skin. The early complications after acheostomy are bleeding, decannulation, infection, and the late complications are sub glottic stenosis, decannulation, infection, tracheo-innominate fistula.

Congratulations to Dr. Alireza Motamedi from Tabriz University of Medical Sciences, Tabriz, Iran who received the first Place in panel of Artificial Intelligence & Studies in Health in the 2th national students› research and technology festival held at the closing ceremony of the 24th national and 10th international annual research and technology congress of Iranian medical sciences.

Asthma Pathophysiology

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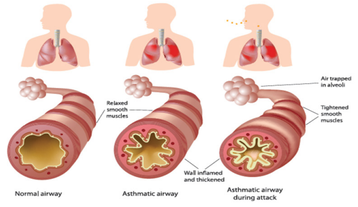

TABLE 281-1 Risk Factors and Triggers Involved in Asthma

ENDOGENOUS FACTORS	ENVIRONMENTAL FACTORS
Genetic predisposition	Indoor allergens
Atopy	Outdoor allergens
Airway hyperresponsiveness	Occupational sensitizers
Gender	Passive smoking
Ethnicity	Respiratory infections
Obesity	Air pollution (diesel particulates, nitrogen oxides)
Early viral infections	Diet
	Dampness and mold exposure
	Acetaminophen (paracetamol)

Triggers
Allergens
Upper respiratory tract viral infections
Exercise and hyperventilation
Cold air
Sulfur dioxide and irritant gases
Drugs (β-blockers, aspirin)
Stress
Irritants (household sprays, paint fumes)

Asthma is a syndrome characterized by airflow obstruction that varies markedly, both spontaneously and with treatment. Asthmatics harbor a special type of inflammation in the airways that makes them more responsive than non-asthmatics to a wide range of triggers, leading to excessive narrowing with consequent reduced airflow and symptomatic wheezing and dyspnea. Asthma is one of the most common chronic diseases globally and currently affects ~300 million people worldwide, with ~250,000 deaths annually. Asthma can present at any age, with a peak age of 3 years. In childhood, twice as many males as females are asthmatic, but by adulthood the sex ratio has equalized.

Atopy is the major risk factor for asthma, and non-atopic individuals have a very low risk of developing asthma. Patients with asthma commonly suffer from other atopic diseases, particularly allergic rhinitis, which may be found in >%80 of asthmatic patients, and atopic dermatitis (eczema), low in antioxidants such as vitamin C vitamin A magnesium selenium and omega3- polyunsaturated fats (fish oil), and high in sodium and omega6- polyunsaturates increase the risk of asthma. Asthma occurs more frequently in obese people (BMI >30 kg/m2) and is often more difficult to control. Although mechanical factors may contribute, it may also be linked to the pro-inflammatory adipokines and reduced anti-inflammatory adipokines that are released from fat cells. **Intrinsic asthma:** A minority of asthmatic patients (~%10) have negative skin tests to common inhalant allergens and normal serum concentrations of IgE. These patients, with non-atopic or intrinsic asthma, usually show later onset of disease (adult-onset asthma), commonly have concomitant nasal polyps, and may be aspirin-sensitive. **Exercise:** The mechanism is linked to hyperventilation, which results in increased osmolality in airway lining fluid and triggers mast cell mediator release, resulting in bronchoconstriction. Exercise-induced asthma (EIA) typically begins after exercise has ended, and recovers spontaneously within about 30 min. It may be prevented by prior administration of β-2agonists and anti-leukotrienes. Asthma is associated with a specific chronic inflammation of the mucosa of the lower airways. One of the main aims of treatment is to reduce this inflammation.

Congratulations to the Student Research Committee of Tabriz University of Medical Sciences in recognition and appereciation for being among the top candidates for the best students› Research and Technology Committee in the 2th national students› research and technology festival that held at the closing ceremony of the 24th national and 10th international annual research and technology congress of Iraninan medical sciences on October6, 2023, in Tehran, Iran.