



Tabriz University of
Medical Sciences,
Tabriz, Iran

Imam Reza General Hospital Newsletter

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

In this issue we read:

An Overview of the Educational
Subjects of the Webinars of the Studio
COVID of Imam Reza General Hospital,
Tabriz, Iran

International Educational Programms of Imam Reza General Hospital, Tabriz, Iran



• **Mojtaba Mohammadzadeh**
Director-In-Charge's Message
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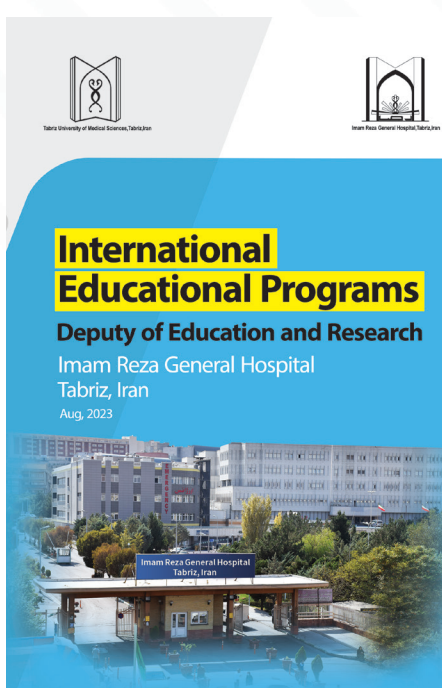
In today's world, medical findings are produced at a remarkable speed. It is essential to hold advanced educational and research courses with the aim of training doctors and nurses. In this regard, educational and research centers should apply innovative methods. Therefore, effective education and research capabilities are of great importance for the success of future learners. It is my pleasure to declare that the international educational programs of Imam Reza General Hospital in Tabriz have been prepared and compiled with the support of the deputies of Education at Tabriz University of Medical Sciences, Tabriz, Iran, as well as the director of international relations of the University. I also acknowledge the efforts of the deputy of Education and Research of Imam Reza General Hospital and the cooperation of all the honorable professors of the educational groups. In this respect, 59 short-term and long-term training programs have been designed that are available on the below¹. At the end, it is worth mentioning that the 2nd Tabriz Virtual Patient Safety and Medical Education International Congress (Tvpm) will be held from 21-25, 2023. In advance, we are grateful for the participation of professors, students and personnels in the Congress.²

¹ <https://imamreza-en.tbzmed.ac.ir>

² www.tabrizvpm.ir



Deputy of Education and Research, Imam Reza General Hospital, Tabriz University of Medical Sciences,
Tabriz, Iran: 2nd Tabriz Virtual Patient Safety and
Medical Education International Congress (Tvpm)



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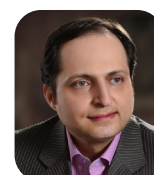
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It is our pleasure to announce that the Clinical Research Development Unit of Imam Reza General Hospital, Tabriz, Iran has obtained the fourth national rank among the clinical research development units of the top medical sciences universities in Iran (based on the score of the activities of year -2020-2021). We congratulate all professors, residents and staff of the Hospital for this precious achievement Deputy of Education and Research, Imam Reza General Hospital, Tabriz, Iran



Training the Airway Management as an Inevitable Subject in Empowering Physicians and Nurses to Manage Critically Ill Patients

Putting a safe airway in patients with airway failure is one of the most crucial and important issues in the field of medicine and a serious challenge for anesthesiologists and emergency physicians. In addition, adventing of the problems in airway management can lead to life-threatening consequences such as hypoxia and aspiration. Therefore, it is essential to teach different approaches of dealing with challenging airways. Another important point for training airway management is that we should consider the three most essential places, including the skill lab, the operation room, and the emergency department. In this regard, I would like to mention the results of a survey published by our colleagues and I entitled as "Role of anesthesiology curriculum in improving bag-mask ventilation and intubation success rates of emergency medicine residents". This study was conducted on 18 first-year emergency medicine residents who successfully completed the essential skills for airway management at the skill lab of the Tabriz University of Medical Sciences to pass a one-month anesthesia course. Before the initiation of the anesthesia cycle and after the completion of the one-month anesthesia curriculum, all residents were requested to perform bag-mask ventilation on patients with an easy airway. The results of successful intubation and ventilation with bag-mask were 16.6% and 27.7%, respectively. After the completion of the one-month anesthesia period, assistants experienced a significant success in intubation and bag-mask ventilation with 88.8% and 87.3%, respectively. In this study, we concluded that the success in learning airway management requires continuous training in the skill lab, operation room, and finally in the emergency department after the theoretical training.



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Paraclinical Investigations in the Field of Rheumatology

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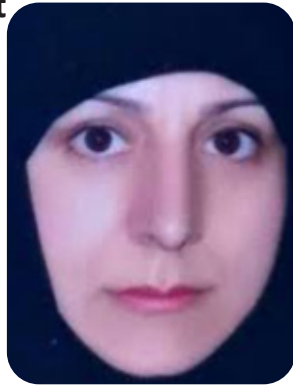


Rheumatology is the study of rheumatic diseases, which includes their diagnosis, treatment, and monitoring. Many rheumatic diseases commonly exhibit the following characteristics: - These conditions can affect multiple systems or organs within the body. - They tend to have a chronic or progressive nature. - They are prevalent. - If a diagnosis is delayed, it can lead to morbidity and even mortality. - They can occur at any age, but unfortunately, they often impact individuals during their most productive, active, and fertile years. Based on the characteristics above, it is evident that rheumatic diseases often place a significant financial strain on both the families of patients and society's healthcare system. This is a matter of considerable importance. In order to effectively address these diseases, it is crucial to ensure timely diagnosis, appropriate treatment, and targeted follow-up. It is well recognized that for rheumatic diseases, the foundation of diagnosis lies in conducting an accurate and comprehensive examination, diligently gathering relevant medical history, carefully evaluating all clinical observations, and considering the laboratory results obtained. Obtaining an accurate and timely diagnosis for a patient with rheumatic symptoms can be challenging at times, as it involves conducting a thorough assessment of the patient's medical history and conducting a comprehensive examination of all parts of the body. It is essential to thoroughly examine various aspects of a rheumatic patient's health, such as the digestive system, respiratory system, skin, eyes, ear, and throat, to make an accurate and timely diagnosis. After completing these thorough examinations, it is time to consider the next crucial step, which involves exploring the superior, more cost-effective, and logical options among the various routine or specialized paraclinical tests. In this critical and pivotal stage, it is essential to give due consideration to the following aspects: - The selection of paraclinical procedures should be guided by a well-founded clinical rationale for each patient. - It is recommended to exercise caution when submitting extensive or indiscriminate laboratory requests, considering various factors. Due to the lack of tangible outcomes, extensive time and financial resources are expended on such requests, which may lead to further confusion and potentially result in missed opportunities for timely diagnosis and treatment in patients- It is essential to recognize that the diagnosis and timely initiation of treatment cannot solely rely on specific tests such as serology, immunology, or MRI. - Standard and non-specific diagnostic tests can provide valuable assistance in diagnosing rheumatic diseases. These tests include: CBC, diff, FBS, Cr, Urea, LFT, TSH, Ca, P, TG, Cholesterol, Uric acid, Urine analysis, Serum Vit D3, ESR, CRP. For instance, alterations in complete blood count (CBC) may encompass leukocytosis, leukopenia, lymphopenia, neutropenia, eosinophilia, thrombocytosis, thrombocytopenia, anemia, and modifications in globular indices. Abnormalities observed in urinalysis, such as proteinuria, leukocyturia, and hematuria, along with elevated levels of erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP), can provide valuable assistance in the initial diagnosis of patients with rheumatic conditions. The subsequent action involves carefully selecting and requesting the necessary specific tests, considering the clinical findings and the outcomes of non-specific preliminary tests. Indeed, this particular category of requests must be thoroughly justified to promptly proceed with the diagnosis or potential diagnoses presented to the patient. The paraclinic of rheumatic diseases encompasses many conditions, as these diseases frequently involve multiple systems and require comprehensive evaluation. The process of making a rational and cost-effective selection among various tests and diagnostic methods and accurately interpreting the results for each patient is often regarded as a combination of science and art. Conducting a thorough physical examination and obtaining a comprehensive medical history are considered fundamental components of the medical profession, requiring scientific knowledge and artistic skill. Each rheumatic disease

presents unique and significant characteristics in both non-specific (general) test outcomes and specific tests. These specific tests and clinical findings contribute to a more streamlined process for reaching a final diagnosis. Due to the absence of a definitive test with %100 specificity, the interpretation of test results relies heavily on the precise assessment of the patient's clinical symptoms. A range of diagnostic imaging services, including CT scans, MRIs, MRA, MRV, CT Angio, PET scans, and various types of normal radiographs, can be valuable in diagnosing and making timely treatment decisions for patients with rheumatic conditions. Requesting electromyography (EMG) and nerve conduction velocity (NCV) tests as part of the initial diagnostic process or assessing potential complications in various rheumatological disorders is logical and beneficial. The biopsy of various tissues involved in the course of rheumatic diseases, including the skin, muscle, peripheral nerves, lung, kidney, and vessels such as the temporal artery, as well as potential biopsies of brain tissue and bone, represents a crucial and timely decision. It is imperative to ensure that the task is executed with utmost precision, as it can significantly contribute to the accurate diagnosis of the disease. However, it is essential to note that the outcome of this endeavor may yield unfavorable or insufficient results, necessitating a subsequent biopsy. Alternatively, treatment may be warranted based on a comprehensive evaluation of the patient's laboratory and clinical findings. The procedure should commence as scheduled, and it is imperative to conduct thorough post-operative patient monitoring. The final statement highlights the challenging nature of diagnosing numerous rheumatological diseases. It emphasizes the importance of relying on accurate scientific information, possessing adequate skills and motivation, and exercising patience to address this crucial matter successfully.

Cervical Intraepithelial Neoplasia Treatment & Follow Up

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CIN is a premalignant lesion of the uterine cervix that is classified as low grade (CIN 1) or high grade (CIN 3, 2) based on the risk of progression to malignancy. In managing patients with CIN, the goal is: To prevent possible progression to invasive cancer while avoiding overtreatment of lesions that are likely to regress. Surveillance or observation is appropriate for some patients with low-risk lesions whereas treatment with an excisional or ablative procedure is recommended for patients with higher risk lesions. The treatment of dysplasia with ablative or excisional procedures is key to cervical cancer prevention. Hysterectomy is unacceptable as a primary treatment for CIN but is an option for patients who are: Incompletely treated with Excision or Ablation or who have recurrent CIN. Clinicians and patients should consider the following factors when choosing a treatment approach. Is a diagnostic specimen needed? Is excision more effective than ablation? Is future pregnancy planned? Does excision have greater morbidity than ablation? FOLLOW-UP patients with CIN: For patients ≥25 years: HPV-based testing at six months; cervical cytology is acceptable only if HPV-based testing is not available. If HPV is positive, then colposcopy and biopsies should be performed and managed based on these results. If HPV is negative, then HPV-based testing should occur annually for 3 years. If HPV remains negative, then HPV-based testing can occur every 3 years for at least 25 years. For Patients <25 Years: Cervical cytology at 6 months. If cervical cytology is HSIL or ASC-H, then colposcopy with biopsies should be performed and managed based on these results. If cervical cytology is LSIL or less (HPV-positive ASC-US) and persists, then colposcopy with biopsies should be performed and managed based on these results. If cytology is negative, then cytology should occur at 6-month intervals for 3 years. If cytology remains negative, then cytology can occur annually. When the patient reaches the age of 25, testing can transition to the HPV-based model and occur every three years, as above. HPV-based testing in 6 months is preferred; colposcopy and ECC at six months are acceptable. If HPV is negative, then HPV-based testing should

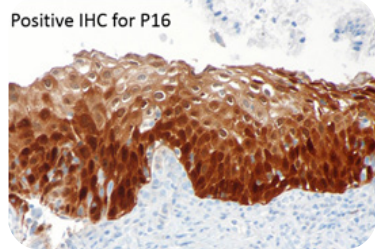
occur annually for 3 years then at 3 year interval for at least 25 years. If HPV is positive, then colposcopy and targeted biopsies should be performed and managed based on these results. - If CIN +2 continues, repeat excision should be performed. - If repeat excision is not feasible or desired, hysterectomy is recommended. Patients with CIN 2,3 on hysterectomy specimen or patients who underwent a hysterectomy for a history of CIN 2,3 have an increased risk of disease recurrence and should be followed with: HPV-based testing annually for 3 years. If HPV is positive, cytology should be performed. If HPV is negative for 3 consecutive years, long-term follow-up with HPV-based testing at 3-year intervals is performed for 25 years. Patients with CIN 1 or less on the hysterectomy specimen and no history of CIN +2 can discontinue follow-up testing. Timing of Future Pregnancy: There are few studies regarding how long patients should wait to conceive after treatment. It is suggested an interval of 3 months or longer from an excisional procedure to conception.

HPV and Pathogenesis of SIL

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Cancer of the cervix causes a burden of human suffering and mortality, which is disproportionate to its size. It is due to the susceptibility of the cervical transformation zone to infection by HPV. Almost all cervical carcinomas are associated with high-risk (oncogenic) HPV. HPV is classified on the viral genome into 240 genotypes. The genital HPVs, transmitted by sexual contact and include low- and high-risk groups. Low-risk HPVs such as 11 & 6 are associated with low grade squamous intraepithelial lesions (LSIL), and high-risk or oncogenic HPVs such as 18 & 16 are associated with high grade squamous intraepithelial lesions (HSIL) and carcinoma. The genital HPVs are epitheliotropic and must reach the proliferating basal cells through a micro-injury. The high-risk HPV types, in particular, have a tropism for the metaplastic squamous cells at the squamocolumnar junction of cervix. HPV infection has two silent and productive phases. In silent infection, episomic viral DNA remains in the cell, but is not transcribed or translated. Early viral genes stimulate cell growth and prevent apoptosis. Productive infection may result in orderly expression of viral genes; the squamous cells mature and assembly and release virus particles at the epithelial surface. This is typically associated with a viral cytopathic effect called koilocytic change. High-risk HPV infection increase likelihood of integration of the viral genes into the host genome and deregulated expression of the viral genome. The E6 and E7 proteins bind and inactivate the proteins encoded by the TP53 and RB anti-oncogenes. E6 cause immortalization, increased cellular growth and genomic instability, and disrupts antiviral response. E7 protein has some similar effects and also induces tumorigenesis, but E6 and E7 synergism is essential for malignant transformation. High-risk HPV infection results initially in LSIL. Most viral infections are cleared through cell-mediated immunity, 12–6 months after appearance. In a small percentage, high risk HPV infection persists or after a long latency period progresses to HSIL, SCC or adenocarcinoma. High-risk HPV can cause high-level expression of p16 antioncogene and strong nuclear and cytoplasmic immunoreactivity. So, immunostaining for p16 is a sensitive (%100) surrogate for oncogenic HPV infections. Staining of every cell in the basal third of the epithelium typically extends into the middle and upper thirds. Immunoreactivity for p16 is not specific for HPV; and simultaneous IHC staining for Ki-67 is more helpful. This shows a higher proliferative index. HPV can be detected by nucleic acid hybridization, with or without amplification, from DNA or (continue on next page)



(Behrooz Shokouhi Gogani cont.) RNA, either a liquid-based or in situ analysis. These tests can be valuable in establishing HPV status, in cases where the clinical, histomorphologic, and p16 immunostaining data are not concordant. PCR for HPV DNA, including viral genotyping, in situ hybridization for HPV, Hybrid Capture HPV test and viral E6/E7 oncoprotein mRNA are such tests. These are highly sensitive, but some lack specificity, others have a long turnaround time are expensive or currently not widely available. Primary HPV screening and HPV immunization may result in dramatic reduction of HPV related diseases.

Pharmacotherapy in Low Back Pain

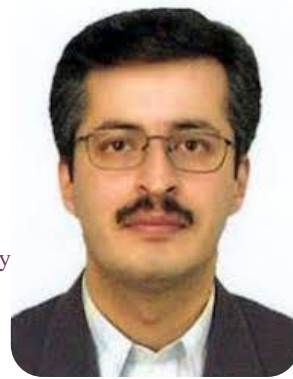
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Low back pain is a symptom, not a disease, and has many causes, and it is extremely common. Approximately %40 of people say they have had low back pain within the past 6 months. Most episodes resolve with or without treatment and the majority of people who have back pain do not seek medical care. Most studies of the various treatments for low back pain, particularly chronic low back pain, unfortunately have shown limited efficacy. Even the most commonly prescribed treatments, such as medications, exercise, and manipulation, in large trials tend to show improvements of only 10 to 20 points on a -100Point Pain Visual Analog Scale. For this reason, most clinicians use multiple treatments on a particular patient in the hope that their cumulative effect will provide sufficient pain relief and an improvement in symptoms. Pharmacologic treatment, includes management of the underlying disease process causing the pain and symptomatic treatment. Both the management strategies should run in parallel. Pharmacotherapy is the first way to pain control in LBP that can play a substantial role in both strategies. The most commonly prescribed are non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, anti-depressants, and opioids. Anti-seizure medications, corticosteroids, and benzodiazepines are also used. It is essential to individualize the pharmacotherapy because the effect, side-effect and toxicity profile for each drug shows marked variation from person to person. Each medication is given in adequate doses for the appropriate length of time. A medication should not be abandoned and regarded as being ineffective until the maximum possible dose does not produce significant side effects. Once adequate pain relief is obtained, the dose should be maintained for 2 to 3 weeks, while encouraging appropriate exercise and normal activity. If pain control is not achieved with adequate doses of a drug, it is advisable to discontinue that drug.

Cervical Intraepithelial Neoplasia (CIN) and Pap test

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We recommend use of the Bethesda terminology for cytology specimens and the diagnostic terminology proposed by the LAST committee, which is based on the Bethesda classification, for surgical pathology specimens. SIL terminology has gained wide acceptance, but there are still holdouts for the CIN terminology and we will adopt the practice, permitted under the LAST recommendations, of providing a two-part diagnosis, with SIL first and the equivalent CIN in parenthesis thereafter. LSIL will thus appear as "LSIL (CIN1)." CIN2 and CIN3 are both

considered HSIL, and the distinction between CIN2 and CIN3 is arbitrary and not clinically relevant. Subtle differences in natural history have been reported for CIN2 versus CIN3, but we would attribute these to inclusion in the former group of some cases better classified as CIN1, rather than being an indication that CIN2 and CIN3 are distinct diseases. Accordingly, we will not make an effort to distinguish between CIN2 and CIN3, instead using the terminology HSIL (CIN3/2) for all high-grade lesions. Most SIL are initially detected cytologically, which leads to colposcopic biopsy. Occasionally SIL will be an incidental finding, sometimes appearing in endometrial biopsy specimens. It is anticipated that there will be a decline in SIL with widespread HPV vaccination, but this has not impacted on practice yet. With primary HPV testing rather than cytologic screening, as discussed in the Cytology section later in this chapter, there will be more patients referred for colposcopic examination, so familiarity with SIL and its mimics will be important for those practicing general surgical pathology for the foreseeable future. LSIL (CIN1) is inclusive of condyloma in the LAST criteria. The former practice of attempting to determine whether there is or is not dysplasia within condyloma (i.e., condyloma ± CIN1) has mercifully been brought to an end. Koilocytic viral cytopathic effect is the pathognomonic feature of condyloma; it is doubtful whether LSIL (CIN1), as an indicator of HPV infection, can be reproducibly diagnosed in the absence of koilocytic change. Condyloma can be exophytic or flat. The former, condyloma acuminatum, are considerably less common than the latter and are visible grossly as a polypoid lesion characterized microscopically by papillomatosis, acanthosis, koilocytosis, and a variable degree of inflammatory infiltration of the stroma. An undulating appearance of the epithelium is a characteristic feature on low-power examination. A mild degree of atypia in the squamous component is common and need not be mentioned; if more severe, it should be evaluated and graded as for the flat SIL (i.e., is there HSIL [CIN3/2] present).

Condyloma acuminatum is associated with HPV6- or HPV11- in %90-%70 of the cases, but occasionally other types—such as HPV16—are encountered. When the latter is the case, high-grade cytologic atypia may be found. The differential diagnosis of condyloma acuminatum includes verrucous carcinoma. Inverted transitional cell (urothelial) papilloma, similar to its more common bladder counterpart, has been described in the cervix. It is probably not related to HPV and is included here only because it enters into the differential diagnosis with the other polypoid benign lesions of this region. Papillary transitional lesions can mimic condyloma acuminatum at low power, but there is no koilocytic change and the cells have very uniform nuclear features, with even chromatin and nuclear grooves. Squamous papilloma is the diagnosis that has been suggested for lesions that architecturally resemble condyloma acuminatum, are composed of benign squamous cells, without dysplasia, but lack koilocytic change. These may be related to condyloma but have cleared the HPV infection, but this is speculative. They are not considered to have premalignant potential.

Flat condyloma, so-called, is more commonly encountered than condyloma acuminatum, and is the classic lesion of LSIL (CIN1). It is typically not recognizable grossly. Microscopically, there is a relatively normal basal cell layer, expanded or hyperplastic parabasal cell layer, orderly maturation, mitotic activity confined to the lower third of the epithelium (but few or no abnormal mitoses), and koilocytosis.

Poisonous Plants

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The most common complaints in poisonous plant are dermatitis and GI irritation and severe complications in these poisonings are usually rare. Treatment: Most contacts do not require treatment and GI decontamination with charcoal is recommended. If the poisonous seed is eaten, WBI is done with PEG. In asymptomatic cases, 6 hours of observation is

required and warning signs should be noted during discharge. Symptomatic cases were admitted and monitoring. The most common poisonous plants, include Castor bean, Coyotillo, Foxglove, Jequirity bean, Oleander, Poison hemlock, Water hemlock, Yew.

Castor Bean: The poison in the seeds of the plant is Ricine, which is the most painful concentration of the plant. It is one of the weapons of bioterrorism. Symptoms 8-6 hours later are delayed gastroenteritis, delirium, convulsions, coma, severe allergic reaction and skin allergy. Treatment: WBI.



Coyotillo: Symptoms of poisoning appear as severe ascending paralysis as bulbar paralysis and in severe cases and lack of effective medical support can lead to death. There is no specific treatment and it is mostly supportive care.



Foxglove: The poison of this plant contains cardiac glycoside (digoxin). Symptoms are nausea, vomiting, diarrhea, abdominal pain, confusion and dysrhythmias. Treatment: Charcol, K level monitor, antiarrhythmic (Fab) for dysrhythmia.



Oleander: The poison of this plant, like foxglove, contains cardiac glycoside (digoxin), which is present in all parts of the plant. Intensity of toxicity: oleander > foxglove > lily of the valley. Symptoms and treatment similar to foxglove.



Jequirity Bean: The seeds of the plant contain Toxalbumi poison, so consuming a single seed of this plant can be dangerous. Symptoms appear as delayed gastroenteritis and sometimes blood/delirium/convulsions/coma. These patients should be monitored for 12 hours. The treatment is WBI and supportive care.



Poison Hemlock: The mechanism of action of the poison of this plant is nicotine alkaloid (neuromuscular block) which is present in all parts of the plant. The symptoms start within 15 minutes to 1 hour and are burning and dry mouth and then Tachycardia / tremor / diaphoresis / mydriasis / (continue on next page)



(Asghar Jafari cont.) muscle weakness / convulsions. Severe: ascending paralysis / rhabdomyolysis / ARF / bradycardia and even death can be seen. Treatment: charcoal and supportive measures.

Water Hemlock: All parts, especially the root, contain this poison. Symptoms such as nausea/abdominal pain/delirium/convulsions that can be resistant to treatment. Treatment includes the administration of charcoal and supportive care.



Yew: The leaves and seeds of this plant contain poison. Symptoms include: nausea/vomiting/abdominal pain (common)/convulsions/dysrhythmia/coma (rare). Treatment: Charcol / WBI / Supportive.

Dieffenbachia Amoena: This plant contains calcium oxalate, which contains a proteolytic enzyme (similar to antitrypsin). Chewing the leaves leads to burning and rapid irritation of the mucus, which is improved with ice cream and cold milk. Symptoms include: nausea/vomiting/abdominal pain (common)/convulsions/dysrhythmia/coma (rare). In severe cases, corticosteroids are effective.



Management of Asthma During Pregnancy

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Asthma impacts 3 to 8 percent of all pregnancies. Pregnancy may be associated with changes in the course of asthma, and asthma may affect the outcome of pregnancy. In general, asthma worsens during pregnancy in approximately 30 to 40 percent of patients and either remains stable or improves in the remainder. Asthma severity prior to pregnancy is related to asthma severity during pregnancy. Asthma exacerbations tend to occur during the middle trimester and is associated with a significant increase in pregnancy complications, such as perinatal mortality, preeclampsia, and preterm delivery. The two primary goals of asthma management are 1) prevention of acute exacerbations, 2) optimization of ongoing asthma control. The benefit of active treatment to maintain asthma control and prevent exacerbations outweighs the potential risks of routinely used asthma medications. For patients with mild persistent or more severe asthma, inhaled glucocorticoids reduce exacerbations during pregnancy, and cessation of inhaled glucocorticoids during pregnancy increase the risk of an exacerbation. Budesonide has been the preferred inhaled glucocorticoid. Retrospective cohort studies provide reassuring data for both salmeterol and formoterol. Neither of these agents should be used in asthma without an inhaled glucocorticoid. Oral glucocorticoids should be used during pregnancy when indicated for the management of severe asthma. Inhaled ipratropium, which is sometimes used for quick relief of asthma symptoms during an exacerbation, is felt to be safe for intermittent use during pregnancy. The safety of inhaled tiotropium during pregnancy is uncertain. The initiation of omalizumab during pregnancy is not recommended. Non-pharmacologic treatments include: 1) Patient education, 2) Smoking cessation, 3) Control of environmental triggers. During labor, epidural anesthesia is preferred for the asthmatic patient who opts for pain control because it reduces oxygen consumption and minute ventilation in the first and second stages of labor and usually can provide adequate anesthesia if cesarean delivery becomes necessary. If general anesthesia is required, ketamine and halogenated anesthetics are preferred, because they may have a bronchodilator effect.

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