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Research Article **Published Date:- 2021-10-13**

Effects of melatonin on liver and lung tissues of animals with bile duct ligation-induced hepatopulmonary syndrome

The objective was to assess the antioxidant effect of melatonin (MLT) on liver and lung tissues of animals with bile duct ligation (BDL)-induced hepato-pulmonary syndrome (HPS). A model of BDL-induced biliary cirrhosis was used in male Wistar rats. Results suggest that MLT has an antioxidant effect on liver and lung tissues in animals with BDL-induced HPS by higher activity of antioxidant enzymes in the group HPS treated with MLT and the histological analysis of lung parenchyma showing decreased damage in this same group, including other analysis described below.

Case Report **Published Date:- 2021-10-05**

COVID-19 and rhino-orbital mucormycosis – a case report

There is a constant rise in cases of rhino-orbital mucormycosis in people with Coronavirus disease 2019 (COVID-19). Generally, Mucormycosis develops in immunosuppression or debilitating diseases. In cases having head and neck involvement, the mold enters the respiratory tract with further involvement of nose and sinuses and there is consecutive progression into orbital and intracranial structures. Diabetes Mellitus (DM) is an independent risk factor for both severe COVID-19 and mucormycosis. The clinical examination and direct smears are helpful for early diagnosis of the disease and timely intervention. For the better prevention and management of such opportunistic infections in COVID-19 patients, it is prudent to establish prophylactic treatment protocols along with rational use of corticosteroids. We here report a case of Rhino-orbital Mucormycosis infection caused by Rhizopus oryzae in a COVID-19 patient with Diabetes Mellitus.

Research Article **Published Date:- 2021-09-06**

Asthma and pregnancy prevalence in a developing country and their mortality outcomes

Background: Latin America has always had high maternal and infant mortality rates. However, the prevalence of asthma in pregnant patients and their outcomes are unknown.
We aimed at answering those questions in a developing country's maternity hospital.
Methods: Since January 2011, a cohort of 591 pregnant asthma patients was prospectively recruited for 60 consecutive months. Patients were followed up by a multidisciplinary team until delivery. They were divided into two groups: one of 186 smokers or morbidly obese patients and another of 405 nonobese nonsmokers. Outcomes of mothers and their babies were documented.
Results: Out of 57,031 deliveries, the overall estimated prevalence of 591 asthmatic pregnant patients was 1.03%. When adjusted for age standardized prevalence, it turned to 9.2%.
With 28 maternal deaths (49 per 100,000 live births). None of these women had asthma. There were also 413 deaths among newborns (7.24/1000 live births). One occurred in the smoker/obese group (5.37/1000 live births) and two in the nonsmoker nonobese group (4.84/1000 live births). The prevalence of asthma during pregnancy seemed lower than in some affluent societies. Overall maternal mortality rates were similar to national figures; however, data on mothers' mortality with asthma were unexpectedly absent.
Conclusion: A multidisciplinary approach and the use of a low-cost inhaled steroid seemed to be the reasons for this. However, infant mortality rate remained high, which could be related to the risk of asthma itself. We believe there's a worldwide need for agreements on a standardized approach for asthma's epidemiological surveys, in order to make them comparable

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Review Article **Published Date:- 2021-08-09**

SARS-CoV-2 Infection, COVID-19, and long covid: Saga of erratic immune response, waning immunity, and immune system failure

Introduction - evolution of SARS-CoV-2 variants: With the unrestrained pandemic for over last one-and-half year, SARS-CoV-2 seems to have adapted to its habitat, the human host, through mutations that facilitate its replication and transmission. The G variant incorporating D614G mutation, potently more transmissible than the ancestral virus arose during January 2020 and spread widely. Since then, various SARS-CoV-2 variants of concern (VOCs) and variants of interest (VOIs) with higher infectivity or virulence or both, have evolved on the background of G variant, and spread widely.

SARS-CoV-2 infection and the immunodynamics: As the virus becomes more transmissible, its lethality may drop. Apart from the humoral immunity, T-cell recognition from a previous SARS-CoV-2 infection or vaccination may modify the disease transmission correlates and its clinical manifestations. On the other hand, the immunity generated may reduce probability of re-infection as well as limit evolution of adaptive mutations, and emergence of highly infectious and immune-escape variants. There are complex issues related to the SARS-CoV-2 evolutionary dynamics and host's immunodynamics.

Trending etiopathoimmunological correlates: The evolution potential of SARS-CoV-2 is limited because of proofreading function of nsp14. The S protein mutations affect transmissibility, virulence, and vaccine efficacy. The D614G mutation in G variant with higher infectivity has turned the Chinese epidemic into a pandemic. Other SARS-CoV-2 variants, such as Alpha, Beta, Gamma, and Delta seem to have evolved as result of adaptation to selective pressures during periods of prolonged infections and subsequent transmission. Further, there is issue of convergent association of mutations.

Basics of immunity and immune system failure: The nature of the immune response after natural SARS-CoV-2 infection is variable and diverse. There are pre-existing neutralizing antibodies and sensitized T cells elicited during previous infection with seasonal CoVs influencing the disease susceptibility and course. The virus has evolved adaptive mechanisms to reduce its exposure to IFN-I and there are issues related to erratic and overactive immune response. The altered neutralizing epitopes in the S protein in SARS-CoV-2 variants modify the immune landscapes and clinical manifestations.

Conclusion: current scenarios and prospects: Presently, the SARS-CoV-2 infection is widespread with multiple evolving infectious variants. There is probability of its transition from epidemic to endemic phase in due course manifesting as a mild disease especially in the younger population. Conversely, the pandemic may continue with enhanced disease severity due to evolving variants, expanded infection pool, and changing immunity landscape. There is need to plan for the transition and continued circulation of the virus during the endemic phase or continuing pandemic for indefinite period.

Case Report **Published Date:- 2021-08-05**

"Fatty Lungs": An uncommon case of Autoimmune Pulmonary Alveolar Proteinosis

Pulmonary Alveolar Proteinosis (PAP) is a rare lung disease characterized by excessive accumulation of surfactant lipids and proteins in alveoli and terminal airways. It is caused by impaired GM-CSF signaling [1]. Surfactant is synthesized and secreted by alveolar type II epithelial cells, and removed by uptake and catabolism by these cells, and the alveolar macrophages. Patients with PAP usually describe gradual onset of progressive exertional dyspnea and non-productive cough. However, an asymptomatic presentation is observed in up to 25% of cases, even in the presence of diffuse radiographic changes. Three recognized subtypes exist. Autoimmune PAP is associated with neutralizing GM-CSF autoantibodies and accounts about 90% of cases. Secondary PAP may occur in the context of any disease that reduces the abundance or functionality of alveolar macrophages, resulting in impaired surfactant clearance. Congenital PAP is the result of genetic mutations that disrupt GM-CSF signaling, including mutations in the ?- or ?-chains of the GM-CSF receptor [1-3].

Case Report **Published Date:- 2021-08-04**

"Vanishing" breast implant – when a breast prosthesis is moving into the pleural cavity

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This case shown here represents a rare situation where the breast implant is spontaneously and inadvertently migrated from its submammary position via the thoracic wall into the ipsilateral pleural cavity after performing an ipsilateral thoracotomy due to atypical wedge resection of the right upper lobe four months ago. Intraoperatively, the implant has been neither dislodged nor manipulated in any way.

In the literature, there are some sparse case descriptions where such breast implant migrations are encountered after VATS procedure (video-assisted thoracoscopy) [2] and open thoracotomy surgery [3]. Interestingly, our case report is quite similar to those which was published by Dutch colleagues in 2014 [4].

Considering the etiology and pathomechanism of such an implant migration as shown here, there is a common agreement that both a leakage of the implant´s fibrous capsule and an operative transection of the intercostal thoracic wall are prerequisite to create a potential migrating pathway to allow implants moving towards the pleural cavity [5]. Additionally, it is believed that the negative pressure within the pleural cavity also alleviates the unidirectional herniation by “sucking in the implant” into the interpleural space [6]. Sometimes, external repetitive pressures such as stretching massages may cause or trigger such an implant dislocation. Furthermore, there are cases described in which, seemingly, implant migration does occur without known preceding thoracic surgery [7]. Eventually, there are cases published in the literature with intrapleural spreading of disrupted breast implant debris [8].

With our patient, thanks to the absence of any discomfort or pain, it was concluded after agreed statement of an interdisciplinary round table discussion not to remove the dislocated implant surgically because of potential intercostal tissue damage and subsequent pain to await. More astonishing, the clinicians involved in this case wondered the fact that the missed implant of her right breast remained either unnoticed or has been completely neglected by the female patient.

In this short communication, we present a rare and unusual case of an obviously vanishing breast implant which is found to be inadvertently migrated into the adjacent pleural space after undergoing thoracic surgery.

According to common legal policy at our institution, an approval for case reports is generally provided as it was obtained in this particular case.

Case Report **Published Date:- 2021-08-04**

Non-smoking woman with adenocarcinoma of the lung, IV stage with ROS1 mutation and acquired thrombophilia

Despite the fact, that lung cancer is more common among older smoking men, however it may also develop among young women without a smoking anamnesis. We report here a history of a non-smoking woman, 40 years old, with a diagnosis of lung adenocarcinoma at IV stage. Despite the fact, the woman received three lines of palliative chemotherapy, the disease progressed. After the sample of the tumor was tested by genetic approach, ROS1 mutation was detected, and the patient was treated with a ROS1 inhibitor, Crizotinib. Sharp improvement was observed already after the first week of treatment. After one-month adenocarcinoma shrink, and specific supraclavicular lymph nodes disappeared. Unfortunately, due to problems with financing the treatment was stopped, after what the disease began to progress rapidly, and the patient died after a month due to brain metastasis. This case is noteworthy also because the patient was first diagnosed a thrombophilia with thrombi present in deep calf veins, left heart ventricle and lungs Adenocarcinoma was discovered occasionally when during video-assisted thoracoscopic surgery biopsy specimen was taken from suspicious mass in the lower lobe of the right lung. This story reminds us that lung carcinoma may start with a paraneoplastic syndrome, like thrombophilia as in this case and finding of adenocarcinoma of the lung in young, non-smoking persons is indicative for possible ROS1 gene mutation. In such cases early treatment with ROS1 protein-tyrosine kinase inhibitors should be started as soon as possible.

Case Report **Published Date:- 2021-07-30**

Pulmonary mucormycosis in post-pulmonary tuberculosis as an emerging risk factor: A rare case report

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Pulmonary mucormycosis is an uncommon pulmonary fungal disease, which is commonly seen in immunocompromised individuals. It is caused by fungi of class Zygomycetes. It constitutes the third most common invasive fungal infection following aspergillosis and candidiasis. Risk factors include patients with hematological malignancies, diabetes mellitus, and immunocompromised states. It is difficult to diagnose early due to non-specific clinical presentation and delay in treatment associated with greater mortality. As we know that Tuberculosis and HIV are highly prevalent in country like India. Post pulmonary tuberculosis is emerging as a risk factor for Pulmonary mucormycosis in the developing countries like India. Patients with non-resolving pneumonia are generally misdiagnosed as Pulmonary tuberculosis. The diagnosis of Pulmonary Mucormycosis is based upon demonstration of fungal hyphae in the clinical specimen. We highlight the importance of clinical suspicion in these cases for early diagnosis and early treatment initiation can reverse morbidity and mortality associated with Pulmonary Mucormycosis. We report 2 cases of Pulmonary mucormycosis present in post-pulmonary tuberculosis patients.

Case Report **Published Date:- 2021-07-30**

A Case series on Asthma-COPD overlap (ACO) is independent from other chronic obstructive diseases (COPD and Asthma)

As we know that, Asthma and chronic obstructive pulmonary diseases are well characterized diseases, they can co-exist as asthma-COPD overlap (ACO). The co-existence of asthma-chronic obstructive pulmonary disease overlap (ACO) in chronic obstructive pulmonary disease (COPD) patients is often unrecognized. In patients with a primary diagnosis of COPD or Asthma, the identification of ACO has got implication for better prognosis and treatment. Such patients experience frequent exacerbations, poor quality of life, rapid decline in lung function and high mortality than COPD or Asthma alone. Inhalational steroids provide significant alleviation of symptoms in such patients and some studies suggest that the most severe patients may respond to biological agents indicated for severe asthma. Patients who have asthma with a COPD component tend to present with severe hypoxia because of Irreversible/fixed airway obstruction and impairment of the alveolar diffusion capacity by emphysematous changes. In contrast, patients with COPD who have an asthma component not only have exertional dyspnoea but also develop paroxysmal wheezing or dyspnoea at night or in the early morning. The criteria to diagnose asthma-COPD overlap (ACO) include positive bronchodilator response, sputum eosinophilia or previous diagnosis of asthma, high IgE and/or history of atopy. There is scarcity of literature available in country like India. We highlight the importance of identification of Asthma COPD overlap as different phenotype from COPD or asthma alone as it is challenging to diagnose ACO in India. We report 3 cases having both the features of asthma and COPD, later diagnosed with Asthma-COPD overlap.

Case Report **Published Date:- 2021-06-25**

Organizing pneumonia as the initial presentation in rheumatoid arthritis – A case report

Organizing pneumonia (OP), can be seen in association with lung injury, infection, drug intoxication, and connective tissue diseases. Patients of rheumatoid arthritis (RA) are prone to develop interstitial lung disease (ILD), but the pulmonary involvement usually occurs several years after the joint manifestations. Only in about 10% cases of RA, the initial manifestation of the disease can be in the form of interstitial lung disease. OP as the initial manifestation of RA is extremely uncommon occurrence.

Here is presented a case of 52-year-old male who presented with OP as the initial manifestation of RA. On investigation, the RA factor and anti-CCP Antibodies were positive. Based on clinical, radiological and histopathological findings the diagnosis was established.

Research Article **Published Date:- 2021-06-18**

Cystic fibrosis, the key link with airborne alpha emitting nanoparticulates

Cystic fibrosis is explained in this paper that suggests tackling the disease by elimination of the most significant sources of contamination.

Review Article **Published Date:- 2021-06-15**

Pulmonary Involvement in COVID-19 and 'Long Covid': The Morbidity, Complications and Sequelae

Introduction: the perennial pandemic: There are serious challenges posed by the SARS-CoV-2 virus and COVID-19 as the disease. With the persistence of the pandemic over one and half year, it is being feared that the COVID-19 may have become the new reality associated with human existence world over and the mankind may have to live with it for years or even decades. Further, the grievous nature of the disease is evolving further with genomic changes in the virus in form of mutations and evolution of variants, with enhanced infectivity and probably virulence.

Acute and chronic phases of COVID-19: Epidemiologically, it is becoming clear that apart from the advanced age and pre-existing conditions, such as diabetes, cardiovascular, pulmonary, and renal diseases, certain constituent factors render some patients more vulnerable to more severe forms of the disease. These factors influence the COVID-19 manifestations, its course, and later the convalescence period as well as the newly defined 'Long COVID phase. The substantial continuing morbidity after resolution of the infection indicates persisting multisystem effects of 'Long Covid'.

Lung damage associated with COVID-19: COVID-19 is primarily a respiratory disease presenting with a broad spectrum of respiratory tract involvement ranging from mild upper airway affliction to progressive life-threatening viral pneumonia and respiratory failure. It affects the respiratory system in various ways across the spectrum of disease severity, depending on age, immune status, and comorbidities. The symptoms may be mild, such as cough, shortness of breath and fevers, to severe and critical disease, including respiratory failure, shock, cytokine crisis, and multi-organ failure.

Implications for the post-COVID care: Depending on the severity of respiratory inflammation and damage, as well as associated comorbidities, duration of injury and genetics, the progressive fibrosis leads to constriction and compression of lung tissues and damage to pulmonary microvasculature. Consequently, the COVID-19 patients with moderate/severe symptoms are likely to have a significant degree of long-term reduction in lung function. Depending on the severity of the disease, extensive and long-lasting damage to the lungs can occur, which may persist after resolution of the infection.

Managing the long COVID's challenges: Given global scale of the pandemic, the healthcare needs for patients with sequelae of COVID-19, especially in those with lung affliction are bound to increase in the near future. The challenge can be tackled by harnessing the existing healthcare infrastructure, development of scalable healthcare models and integration across various disciplines with a combination of pharmacological and non-pharmacological modalities. Following clinical and investigational assessment, the therapeutic strategy should depend on the disease manifestations, extent of damage in lungs and other organs, and associated complications.

Case Report **Published Date:- 2021-03-24**

A case report on Meigs' syndrome and elevated serum CA-125: A rare case report

Meigs syndrome is an uncommon presentation, where a benign ovarian neoplasia presents along with ascites and pleural effusion. About 1% of ovarian neoplasia can present as Meigs syndrome. Patients with Meigs' syndrome and elevated serum CA-125 are not frequently reported. We report a case of a 50-year-old women who presented with shortness of breath, cough, weight loss of one and half month duration. Chest radiograph of the patient with clinical examination of patient confirms pleural effusion as cause of progressive shortness of breath. The presence of a pelvic mass and elevated serum CA-125, which raised the possibility of malignancy. After complete resection of tumor, the pathologic reports confirmed a benign ovarian neoplasia. We highlight the importance of suspicion, careful general examination, radiological assessment and histological tests to confirm the diagnosis of Meigs' syndrome.

Review Article **Published Date:- 2021-02-26**

Chronic fatigue syndrome and epigenetics: The case for hyperbaric oxygen therapy in biomarker identification

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Chronic fatigue syndrome (CFS) is a poorly-understood respiratory condition that affects millions of individuals. Hyperbaric oxygen therapy (HBOT) is a treatment option being considered to address CFS as it is suggested to combat fatigue and increase oxygenation. HBOT provides two opportunities in advancing research of CFS: it may provide data on symptom amelioration and be utilized in the search for a biomarker. By either identifying biomarkers before using HBOT to compare epigenomes of patients before and after treatment or using HBOT to find epigenetic discrepancies between patients with and without treatment, matching epigenetic regulation with symptom amelioration may significantly advance the understanding of the etiology and treatment mechanism for CFS. EPAS1/HIF-2? is a leading candidate for an epigenetic biomarker as it responds differentially to hypoxic and normoxic conditions, which degrades more slowly in hypoxic conditions. Epigenetic regulation of EPAS1/HIF-2? in such differential conditions may be explored in HBOT experiments. In addition to HBOT as a promising treatment option for CFS symptoms, it may aid the identification of biomarkers in CFS. Further research into both outcomes is strongly encouraged.

Research Article **Published Date:- 2021-02-15**

Comparison of clinical, chest CT and laboratory findings of suspected COVID-19 inpatients with positive and negative RT-PCR

Introduction: COVID-19 is an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 and it was first reported in China. The aim of this study was to compare clinical features, chest CT findings and laboratory examinations of suspected COVID-19 inpatients according to RT-PCR analysis.

Methods: Demographics, comorbidites, symptoms and signs, laboratory results and chest CT findings were compared between positive and negative groups. The study included 292 patients (134 females, 158 males) suspected of COVID-19. All statistical calculations were performed with SPSS 23.0.

Results: 158 (54.1%) of the cases were male and 134 (45.9%) were female. Their ages ranged from 17 to 95 years, with an average of 50.46 ± 20.87. A symptom or sign was detected in 86.3% of all patients. The chest CT images of 278 patients were analyzed. Chest CT was negative in 59.2% of patients with positive RT-PCR and 43.9% of patients with negative RT-PCR results. Chest CT findings were atypical or indeterminate in 22.4% of patients with positive RT-PCR results and 20% of patients with negative RT-PCR analysis. ALP, bilirubine, CRP, eosinophil count, glucose, CK-MB mass and lactate were significantly lower in patients with positive RT-PCR test. LDH, lipase, MCV, monocyte, neutrophil count, NLR, platelet, pO2, pro-BNP, procalcitonin, INR, prothrombin time, sodium, troponin T, urea, WBC were significantly lower in patients with positive RT-PCR test results.

Conclusion: The diagnosis of COVID-19 is based on history of patient, typical symptoms or clinical findings. Chest CT, RT-PCR and laboratory abnormalities make the diagnosis of disease stronger.

Research Article **Published Date:- 2021-01-28**

Induction therapy with Erlotinib (E) and Gemcitabine/Platinum (GP) in stage III NSCLC

Background: In 2004 we started a phase II trial in non-small lung cancer (NSCLC), stage III, with erlotinib followed by a combination with a platinum-based doublet in unselected patients to identify molecular subgroups benefitting from an EGFR targeting approach.

Patients and methods: Induction with erlotinib (E, 150 mg, d1-42) was followed by three cycles of gemcitabine (G, 1250 mg/m², d1+d8, q3w) and cisplatin (P, 80 mg/m², d1, q3w). Patients with at least stable disease after E were treated with a GP + E combination. Induction was followed by surgery and radiation. The trial was conducted as a prospective, multi-center, open label, exploratory phase II study to determine pathological response rate (pRR), as well as secondary endpoints disease free survival (DFS) and overall survival (OS).

Results: Of 38 prescreened patients 16 were included in the main study. Due to slow recruitment the study had to be terminated early. Combination of E and GP was well tolerated, surgery was feasible after induction therapy in 12 of 16 patients, 7/12 (58%) patients had a major pathological response (MPR). Median overall survival for patients with MPR was 57.7 months (confidence interval (CI), 37.4 to 78.0; n = 7) and for patients without MPR 11.9 months (CI, 6.4 to 17.4; n = 5). 2/16 patients had an epidermal growth factor receptor (EGFR) mutation.

Conclusion: Before discovery of distinct molecular mechanisms in NSCLC our study was an attempt to identify clinical and pathological subgroups that would benefit from E induction. Two patients with an EGFR mutation were identified. MPR was a predictor of long term disease free and overall survival.