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VISION

To emerge as one of the premier pharmacy colleges in the country and produce pharmacy professional of global standards.

MISSION

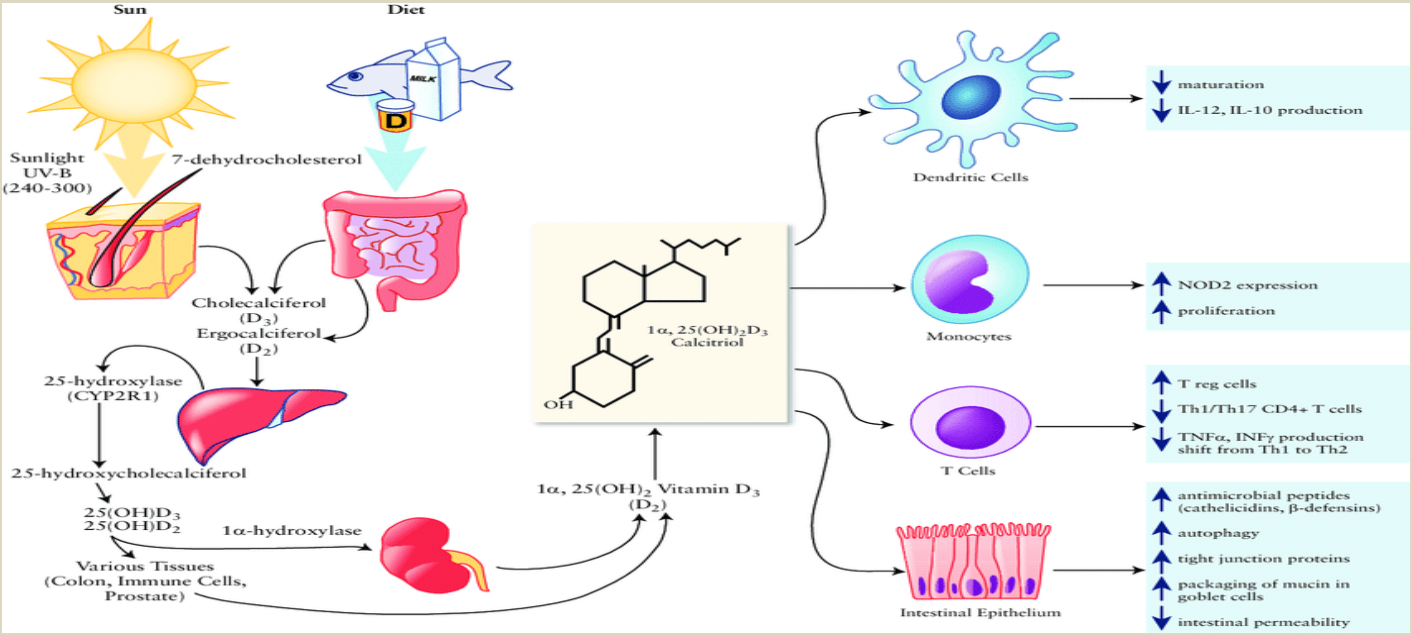
- To deliver quality academic programs in Pharmacy and empower the students to meet industrial standards.
- To build student community with high ethical standards to undertake R&D in thrust areas of national and international standards.
- To extend viable outreach programs for the health care need of the society.
- To develop industry institute interaction and foster entrepreneurial spirit among the graduates

A Review on The Role Of Vitamin-D Mitigates Chemotherapy Induced Gastrointestinal Mucositis In Cancer Patients

Dr Robin George

Introduction:

The term cancer - Neoplasm refers to a disease of cells that shows uncontrolled proliferation, differentiation, invasiveness and the ability to metastasise. Neoplastic cells are those who lost the control and regulation of replenision and proliferation. For cancer patients one of the treatment option is chemotherapy based on patients' condition which means these are chemotherapeutic agents aiming to decrease the tumour size or to retard the tumour growth. Due to chemotherapeutic agents' patients may face some common side effects such as: Nausea, vomiting, Myelosuppression, Mucositis (inflammation of gastrointestinal mucosal layer), Alopecia. Mucositis estimated to occur in 20% to 40% of patients receiving conventional chemotherapy and up to 80% of patients receiving high-dose chemotherapy. G. I mucositis is one of the adverse outcomes of chemotherapy that has plagued cancer sufferers for years for which no effective treatment currently exists .Researchers found that Vitamin -D can mitigate chemotherapy induce gastrointestinal mucositis .Vitamin D which commonly helpful in absorption of calcium in our body. Vitamin D is also thought to improve the efficacy of certain cancer drugs. It shows the most promise and could prove the key hormone to alleviate suffering for cancer patients.



Recent studies investigating inflammatory pathways, such as cytokines and apoptotic markers, do show that interleukin-blocking proteins alleviate symptoms of gastrointestinal mucositis. However, the effectiveness of these treatments varies depending on the type of anticancer agent administered, meaning blocking compounds may be limited in their application. Targeting the host's gut microbiome in preventing dysbiosis is also thought to be a potential avenue for exploration. The use of probiotic gut bacteria (i.e. *Lactobacillus* spp.), while beneficial in preventing chemotherapy radiotherapy-induced diarrhoea, does not seem to alleviate the physiological damage caused by gastrointestinal mucositis. Vitamin D has been widely shown to have a host of anti-inflammatory and immunomodulatory effects in the intestine, as well as anticancer properties and therefore, may reduce severity of gastrointestinal mucositis. It appears that Vitamin D helps suppress inflammation and enhances the function of T-cells which boosts immunity.

Conclusion:

Scientists are investigating the effects of enhanced vitamin D activity in the intestine on both reducing damage and minimising compositional change to the gut microbiome caused by chemotherapy agents. Probiotics (live bacteria and yeast) have also been widely promoted for digestive health and there is evidence they reduce the severity of diarrhoea and abdominal pain, but researchers have not been able to establish the direct effect of probiotics on intestinal function that reduces these side effects during and following cancer treatment.

While anti-inflammatory and anti apoptotic agents have shown promise in animal models of gastrointestinal mucositis, there is still no singular mechanism allowing for the development of a therapeutic drug to prevent or cure gastrointestinal injury. A greater insight into the exact mechanistic actions of both probiotics and vitamin D might reveal how to improve their use as therapeutic treatments for gastrointestinal mucositis.

Previous studies showed that low vitamin D levels were associated with an increased inflammatory mucosal state and impaired mucosal tissue barriers. Vitamin D is also thought to improve the efficacy of certain anti-cancer drugs. The researchers are now working on ways to enhance the activity of vitamin D in the intestine as a more viable option for treating gastrointestinal mucositis

LONGITUDINAL EXTENSIVE TRANSVERSE MYELITIS-A CASE REPORT

Dr. Varadaraju Gurupriya

Introduction:

LETM is characterized by spinal cord inflammation extending vertically through three or more vertebral segments. It may occur as an uncommon manifestation of SLE or other autoimmune diseases. Signs and symptoms include neurological dysfunction in motor and sensory tracts on both sides of spinal cord. Involvement of motor and sensory control pathways frequently produce altered sensation, Weakness, Urinary or bowel dysfunction.

Case Study:

We present the case of a 35-year-old female(K/C/O paraparesis 2016 recovered) complaining of weakness of both lowerlimbs, bladder and bowel disturbances with curdle like sensation, loss of sensation below chest area since 2 months. Patient also presented with history of chronic backache from 2 years,2 months back she developed paresthesias ascending type in both lower limbs within 3 days upto chest area, unable to walk or move around in bed. On examination patients blood pressure was 130/90 mm of Hg, pulse rate was 70 bpm, power of upper limbs 4/5,lower limbs 1/5.Gait could not be tested.

Serum electrolytes, Renal function tests and liver function tests were found to be normal.MRI C and D spine plain and contrast showed T_2 hyper intensity in spinal from C_4 to D_7 s/o of demyelination, thinning of spinal cord noted at upper dorsal level. Anti nuclear antibody ELISA test revealed positive indicating the presence of antibodies.

Patient found to have elevated levels of plasma lactate-53mg/dl(4.50-19.80).With the evidence of laboratory investigations, patient was diagnosed with “NMO antibodies associated longitudinal extensive transverse myelitis”. Treatment include patient initially treated with 1g of intravenous methylprednisonolone, no significant improvement in the patient.5 cycles of plasmapheresis, also known as plasma exchange (PLEX) were done, which is often recommended for moderate to severe forms of LETM. Due to poor prognosis of the disease patient was adviced to be in observation for 15 days and planned for 2 doses of cyclophosphamide 750 mg .Mean while symptomatic treatment was also given.

Conclusion:

LETM can be specifically diagnosed with the help of NMO-IgG antibodies test, so that we can differentiate LETM with Multiple sclerosis in intial stages. We suggest to perform NMO antibodies test as early as possible in the case of symptomatic assessment of either LETM or Multiple sclerosis, which facilitates the choice of treatment for the better patient care and enhanced health related quality of life.Further studies with larger cohort should be needed to consolidate the findings and it potentially leads to therapeutic recommendations in majority of the NMO-IgG seropositive patients.

VALSARTAN IN COVID-19: A INNOVATIVE DRUG

T Saranya, Pharm D Internee

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (COVID-19) is responsible for the current global pandemic. To date, no antivirals directed against the virus or effective vaccines are available. It is essential to recognise the risk factors and components that may play a protective role. There is no clear evidence on the correlation between changes in the renin–angiotensin system (RAS) by treatment with ACEIs, ARBs or DRis and COVID-19 infection. Randomised controlled trials are needed to verify the involvement of COVID-19 viral infection and chronic treatment with these drugs.

A possible scientific hypothesis to investigate is the role of the neprilisin inhibitor sacubitril in association with valsartan in the more severe stages of COVID-19 infection. The challenge to defeat the current pandemic poses several objectives, among them trying to give added values to therapeutic solutions; in this direction, the association with sacubitril/valsartan has already demonstrated therapeutic efficacy in the treatment of chronic symptomatic heart failure with reduced ejection fraction in several studies indirectly, the therapeutic benefits of the cardiovascular type are also directed to a decrease in the risk of infection and complications from COVID-19. Furthermore, there is evidence of a significant increase in N-terminal pro hormone BNP (NT-proBNP) in patients with COVID-19. Studies show that higher NT-proBNP was an independent risk factor for death in patients with severe COVID-19, moreover, NT-proBNP is associated with proinflammatory effects.

Sacubitril, through its mechanism of action, increases neprylisin-degraded peptides, such as natriuretic peptides (NPs), peptide natriuretic atrial (ANP) and peptide natriuretic brain (BNP) evidence associates these peptides with antiflammatory, antihypertrophic and antifibrotic effects. Recent evidence shows that interleukin-1β secretion is strongly inhibited by the BNP/ Natriuretic peptide receptor (NPR-1)/ cyclic guanosine monophosphate (cGMP) axis to all molecular mechanisms closely controlling its production and release, Nuclear factor NF-kB, extracellular regulated kinases ERK 1/2 and all elements of the NALP3/ASC/caspase-1 inflammasomic cascade, and that NALP3 inflammatory inhibition is directly related to the deregulatory effect of BNP on the activation of NF-kB/ERK 1/2 also, the decrease of NT-proBNP by sacubitril is known.

Valsartan in association, by blocking the AT-1 receptor of Ang II, decreases profibrotic and proinflammatory activities mediated by AT-1r and indirectly increases the action of Ang II on AT-2r with ant fibrotic, anti inflammatory effects. Based on the evidence and in relation to our generated hypothesis, we believe that the use of sacubitril/valsartan in the most severe stages of COVID-19 infection could have therapeutic efficacy, with anti-inflammatory and ant fibrotic effects mediated by NPs.