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Current Scenario of Nano-Biomaterials in Biomedicine - A Review

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ABSTRACT

Nano-biomaterials have long been the attention of lively research owing to their exclusive properties that can be exploited for biomedical applications such as biosensing, tissue engineering bioimaging, drug and gene delivery, medical implant, wound healing, and diagnostic systems like protein and DNA microarrays. Nanostructured biomaterials such as nanoparticles, nanofibers, nanosurfaces and nanocomposites have drawn huge interest for human body regeneration or tissue repair, drug and gene delivery, medical imaging, cancer therapy and various other suitable biomedical applications. Metal, Polymers, composites, and ceramics are used to prepare nano-sized or nano-structured biomaterials. The discipline of biomaterials and medical devices has progressed over a phase of 70 years. The development of nanotechnology as a foremost field of science and active research in the last few eras and its assimilation with biology has launched numerous paths for the advancement of Nano- biomaterials. The purpose of this review is to describe what is known about various types, synthesis, applications & limitations of nanomaterials.

Keywords: Nano-biomaterials, Biomedicine, Nanotechnology, Medical Applications and Nanoparticles.

Paracetamol - A Billion Dollar Market

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ABSTRACT

Paracetamol, chemically names as acetaminophen is one of the most popular analgesic and antipyretic drug around the world, available without a prescription, both in mono- and multi-component preparations. It is recommended as a first-line treatment of pain associated with osteoarthritis. It is well tolerated and produces few side effects from the gastrointestinal tract. COVID-19 pandemic represented a great sanitary threat hence, in such situation antiviral and host-directed medications to treat the disease were needed. Non-steroidal anti-inflammatory drugs (NSAIDs) and paracetamol (PAC) were widely used as the drug in these conditions. A great effort was taken to find drugs and treatments for hospitalized, severely ill patients of the covid-19. To find its efficacy and toxicity due to prolonged use during the times several test and survey were taken and the data/results obtained were interpreted and various conclusions were made. However, paracetamol gained a lot of demand and ultimately had a great impact on the pharmaceutical industry, therefore, this article highlights about, the necessity and after use effects of paracetamol in people.

Keywords: Paracetamol; COVID-19; SARS-COV 2; NSAIDs; Inflammation; Efficacy.

Systemic Review on Patient Compliance with Medication and Strategies to Enhance Adherence

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ABSTRACT

Adherence to prescribed therapies is a primary determinant for success of treatment. The effectiveness of a treatment depends on both the efficacy of a medication and patient adherence to the therapeutic regimen. There are several types of barriers to the effective use of medicines, which includes poor provider-patient communication, inadequate knowledge about a drug and its use, not being convinced of the need for treatment, fear of adverse effects of the drug, long term drug regimens, complex regimens that require numerous medications with varying dosing schedules, cost and access barriers. Non-adherence to therapy can have negative consequences not only for the patient but also for the provider, the physician, and even the medical researchers who are working to establish the value of the medication on the target population. Medication non-compliance considers a serious concern now-a-days. In this review, we discussed about different methodology to evaluate patient compliance towards medication & interventions to minimize barriers responsible for non-adherence as well as improve compliance.

KEYWORDS: Medication Adherence, Non-Adherence, Barriers, Interventions.

Pharmaceutical Products Recall in India

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ABSTRACT

In developing countries like India, the escalating health complications are pushing new drugs into the pharmaceutical market. Post market surveillances revealed that many drugs in the Indian market cause adverse effects with low standard or manufacturing defects. Pharmaceutical companies voluntarily recall those drugs or Regulatory Authorities may recall the defective drugs in the market based on the recall guidelines. In India, references for pharmaceutical product recalls, complaint and adverse reactions are mentioned in Para 27, 28 of Schedule M and conditions of license for defective product recall in Rule 74(j) and Rule 78(i) and banned drugs under 26A of the Drugs and Cosmetics Act, 1940 and Rules. The objective of this paper is to discuss the drug recall procedures and issues related to drug recall in India.

Screening of Natural Lignands as Potential Anti Alopecia Agents: A Computational Study

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ABSTRACT

Alopecia is a condition in which some or all of the hair from the scalp is lost, which may cause emotional and psychological distress to patients. As conventional treatments have only a transient therapeutic effect and result in unwanted side effects, many patients have attempted to find therapeutic herbs or compounds that function as safer and more potent treatments for alopecia. This study aimed to determine the potential compound components from Siddha formulations against androgen receptor targets as anti-alpecia drugs. Molecular docking used Chimera 1.15, Autodock Tools 4.2, Biovia Discovery Studio 2020, as well as to determine the pharmacokinetic properties and toxicity of drug ingredients with pKCSM. Totally 18 natural ligands from Siddha medications were tested based on their interaction with the androgen receptor (PDB code 4K7A) using molecular docking. The study concluded alpha-amyrin, epicatechin, and catechin compounds were promising candidates for anti-alpecia drugs to be developed further targeting androgen receptors. It was consistent with the molecular docking results, which showed that ΔG and K_i 's values were excellent compared to dihydrotestosterone. The pre-ADMET results also showed that the epicatechin and catechin compounds components could penetrate the plasma membrane when given topically compared to minoxidil.

Keywords: Alopecia, Siddha, Minoxidil, Natural, Herbal

A Case Report on Pemphigus Foliaceus – An Acquired Autoimmune Blistering Disease

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ABSTRACT

Pemphigus is a group of disease characterized by IgG antibodies directed against epidermal adhesion complexes (desmosomes) of keratinocytes, leading to loss of cell adhesion, a phenomenon called acantholysis. The term 'Pemphigus' is derived from Greek word 'Pemphix' that means blister or bubbles. Different types of Pemphigus have been identified based on clinical and histopathological characteristics. Among this pemphigus vulgaris and pemphigus foliaceus were discussed. The patient has fluid filled itchy lesions, multiple facial bullae and erosions all over the body. It was initially diagnosed as a PV, but the patient does not have any blisters on the oral or mucosal membrane and then the blisters were not painful. The patient feels itching on the blisters. Through this evaluation it clearly shows, that the patient is suffering due to PF. The PV and the PF can be treated with corticosteroids and immunosuppressants. In this case, the patient was treated with Inj. Dexamethasone, T.Azothioprine, T.Cetirizine, T.CPM Betamethasone cream and cetrimide cream. Rituximab has been used to treat severe forms with complete remissions in patients and was the first-line treatment in Europe and United States approved by European Academy of Dermatology and Venereology (EADV). The patient should be reviewed periodically to achieve the remission and avoid reoccurrence of the disease.

KEY WORDS: Pemphigus Foliaceus, Pemphigus Vulgaris, blisters, corticosteroids, immunosuppressants