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Development and evaluation of polyherbal transdermal patch for its anti-inflammatory potential

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Background: The present investigation was aimed to formulate transdermal films incorporating herbal drug components. The allopathic system of medicine includes two conventional lines of treatment for inflammatory diseases, which come along with certain side effects. Hence, turning to safe, effective and time-tested Ayurvedic herbal drug formulation would be a preferable option.

Materials and Methods: With this view, transdermal films incorporating herbal drug components such as aqueous extract of fruits of *Abelmoschus esculentus, Lagenaria siceraria and Trichosanthes dioica* were envisaged. The polymeric films were evaluated for their physical properties like thickness, weight uniformity, moisture content, folding endurance, tensile strength and diffusion studies. The skin irritation study done on rat skin showed that the formulation does not produce irritation to the skin.

Results: The formulation is screened for its anti-inflammatory potential and it is found to significantly reduce the paw edema by 60% when compared with the standard drug diclofenac i.e. 70%.

Conclusion: Overall, it was observed that the well-known ayurvedic drugs have been found to be effective through modern pharmaceutical formulation techniques.

Utilization of traditional medicine for treatment of helminthiasis

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Helminthiasis is any macroparasitic disease of humans and animals in which a part of the body is infected with parasitic worms, called helminths. They are responsible for major cause of different life threatening manifestations for mammals including human round the world. According to WHO report, more than 1.5 billion people, or 24% of the world's population are infected with soil-transmitted helminth infections worldwide in 2011. Infections are widely distributed in tropical and subtropical areas, with the greatest numbers occurring in sub-Saharan Africa, American countries, China and East Asia. Over 270 million preschool-age children and over 600 million school-age children were intensively manifested by these parasites. The main species that infect people are the roundworm (*Ascaris lumbricoides*), the whipworm (*Trichuris trichiura*) and the hookworms (*Necator americanus* and *Ancylostoma duodenale*). The mortality associated with heavy roundworm infection is predominantly manifested specifically in children.

Albendazole, mebendazole, triclabendazole, thiabendazole, ivermectin, niclosamide, rafoxanide and other popular synthetic anthelmintic drugs were used in helminthiasis. However, resistance has been developing very fast and is spreading in tropical and subtropical countries. Thus, this has increased the need for development of novel anthelmintic drugs.

Utilization of traditional medicine should be considered in this scenario to kill these parasitic worms and it will help to find out newer molecular entities. The exploration of folklore or ethnic knowledge will facilitate to find out an array of newer compounds to design for better anthelmintic drugs to treat sufferer of helminthic manifestation. Several traditional plants were screened in our laboratory for treatment of helminthiasis.

Biography

Emdad Hossain is currently working as Professor in Pharmacy College, Azamgarh, Uttar Pradesh, India. He is engaged in teaching as well in research associated with natural products with special reference to anti-parasitic activity for last fourteen years. He has published more than 12 research papers in several reputed, referred and impact journals. He also delivered number of lectures in different refresher's course, national and international conferences. He was awarded with the Best teacher award 2002 along with other awards. Currently, he is associate editor of Herald Journal of Biochemistry and Bioinformatics, Indian Journal of Research in Pharmacy & Biotechnology as well as editorial board member of other five Indian and overseas journals.