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ABSTRACT

Diseases are born with man and drugs came into existence since a very early time to remove pain of diseases and to cure them. But at times the drug is not developed into a usable medicine because the costs incurred will not be recovered by the developer. As a result the free market economy is liable to leave some rare diseases as untreated. Such a disease is called orphan disease, the drug as orphan drug, and the sufferer as orphan patient. The objective of this review is to highlight the historical background, classification, lists of orphan drugs along with the recent pharmaceutical development and clinical use.

KEYWORDS: Orphan drugs, Rare diseases, Orphan vaccines

- **Melt In Mouth Tablet: A Review**
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Oral solid dosage form are more popular than other dosage form but suffer from problems like taste, solubility, bioavailability; so patient compliance.

To improve patient compliance, melt in mouth tablets have emerged as an alternative to conventional oral dosage form. The aim is to provide the tablet that quickly melts upon contact with saliva and also provides a good mouthfeel³-

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Fast dissolving tablets (FDTs) have received ever-increasing demand during the last decade, and the field has become a rapidly growing area in the pharmaceutical industry. Upon introduction into the mouth, these tablets dissolve or disintegrate in the mouth in the absence of additional water for easy administration of active pharmaceutical ingredients. The popularity and usefulness of the formulation resulted in development of several FDT technologies. This review describes various formulations and technologies developed to achieve fast dissolution/dispersion of tablets in the oral cavity, along with excipients, evaluation test, marketed formulation, and drugs explored in this field.

KEYWORDS: Disintegrants, Fastdissolving tablets, Superdisintegrants

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ABSTRACT

The challenge of modern drug therapy is the optimization of the pharmacological action of drugs coupled with the reduction of their toxic side effects in vivo. On response is the use of colloidal drug carriers that can provide site specific or targeted drug delivery combined with optimal drug release profiles.^{1,2} With the advent of nanotechnology, the prospects for using engineered nanomaterials with diameters of < 100 nm in industrial applications, medical imaging, disease diagnosis, drug delivery, cancer treatment, gene therapy and other areas have progressed rapidly. The potential for nanoparticles (NPs) in these areas is infinite, with novel applications constantly being explored. The possible toxic effects of these nanoparticles associated with human exposure are unknown. Many fine particles generally considered acquire unique surface properties, when engineered to nanosize and may exhibit toxic biological effects.^{3,4} Nanoparticles and Nano formulations have already been applied as drug delivery system with great success. Nanoparticulate drug delivery systems have still greater potential for many applications, including anti- tumor therapy, gene therapy, and AIDS therapy, Radio therapy, in the delivery of proteins, antibiotics and vaccines and as vesicles to pass the blood brain barriers. Nanoparticles provides massive advantages regarding drug targeting, delivery and release with their additional potential to combine diagnosis and therapy, emerge as one of the major tools in nanomedicine.⁵ In this review article, highlight the possible toxic human health effects that can result from exposure to ultra fine particles (UFPs) generated by anthropogenic activities and their cardiopulmonary outcomes.

KEYWORDS: Nanoparticles, Drug Delivery, Targeting, Drug Loading, Drug Release.

RESEARCH ARTICLE

- **Community Pharmacist: A Tool in Health Care System**
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ABSTRACT

A lot has changed and continue to change, and the pharmacists are also changing focus from medicine to medicine user across the globe. During this role shift, the competency of community pharmacists is in higher demand than ever before. In view of availability of numerous new medicines and drug delivery systems, community pharmacists are challenged to ensure that patients get maximum benefit from their medicines. In such a changed scenario i.e. availability of numerous FDC, DDS, SR products, and targeted DDS, physician alone will fail in guaranteeing the proper use of medicines that leads to the expected result. The community pharmacist would be the right man to guide the patient and their relative about dosage regimen, adverse reaction, storage condition, and time interval between to successive dosage likelihood of drug interaction precaution to be taken etc. It is essential that discovery of new drug, new therapeutics effect of relatively older drugs, clinical trials, toxicological studies etc are all carried out involving community pharmacy at different phases. The pressures driving the need for an expanded practice scope in community pharmacy have been building for the past 2 decades. This review explain broader concept of public health and outline the potential contribution that community pharmacist can make to this agenda. It also describes what steps community pharmacist can take to increase their involvement and contribution to public health at a local level in collaboration with other public health.

KEYWORDS: Health, Community pharmacist, Enhanced services.

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KEYWORDS: Dendrimers, G3 PAMAM dendrimer, 3² full factorial design, Solubility enhancement.

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Keywords: Anti-inflammatory, Carrageenan, Cotton pellet granuloma and *Bauhinia variegata*.

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KEYWORDS: Paracetamol, tablets, evaluation, marketed.

- **Formulation and in vitro-in vivo Evaluation of Theophylline and Salbutamol Sulphate Sustained Release Tablets**
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The matrix tablets were prepared by wet granulation method using hydroxypropyl methylcellulose (HPMC K15M, K4M; HPC and Carbapol 934P) in various percentages. The granules showed satisfactory flow properties and compressibility. All the five tablet formulations showed acceptable pharmacotechnical properties and complied with the in-house specifications for tested parameters. The release rate could efficiently be modified by varying the matrix forming polymer, the use of polymer blends and the addition of water soluble or water insoluble fillers (such as dicalcium phosphate, lactose or mannitol). The tablets swelled and eroded upon contact with release medium. Fitting the in-vitro drug release data to Korsmeyer equation indicated that diffusion along with erosion could be the mechanism of drug release.

Keywords: Matrix system, Erosion, Hydroxypropylmethylcellulose, Antiasthmatic etc.

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Keywords: Aceclofenac, Transdermal Film, Permeation enhancer, *In-vitro* permeation study.

- **A Validated Method for the Estimation of EDTA in Drug Substances and their Intermediates by using Reversed Phase High Performance Liquid Chromatography**
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Keywords: EDTA, C-18 column, Wavelength, Limit of quantitation, and Limit of Detection.

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KEYWORDS: Alfuzosin hydrochloride, Carbapol, HPMC, Floating matrix tablets, scanning electron microscopy, swelling index.

- **New Simple, Sensitive and Economical UV Spectrophotometric Method for Estimation of Risperidone in Tablet Dosage Form and its Peroxide Degradation Kinetic**
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Keywords: Risperidone, UV Spectrophotometric method, λ_{max} , Degradation kinetic

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Keywords: Overactive Bladder, Solvent Casting Technique, Oxybutynin

- **Taste Masking and Evaluation of Rapid Disintegrating Tablet of Gatifloxacin Sesquihydrate**
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Keywords: Fast dissolving tablet, Gatifloxacin Sesquihydrate, Ion exchange resin, Super disintegrants.

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is used as a primary polymer because of its excellent mucoadhesive property and secondary polymers like HPMC, EC, Carbopol-940P and Eudragit RL-100 were used. The formulations were evaluated for in-vitro drug release, in-vitro swelling studies and in-vitro bioadhesive strength studies. Formulation R-03 showed maximum release of 95.68% in 10hours and maximum swelling index of 99.59 % after 10hours, also showed highest bioadhesion. FTIR studies show no evidence on interaction between drug and polymers. The results indicate that suitable mucoadhesive tablets with desired properties could be prepared.

Keywords: Mucoadhesive tablets, Losartan Potassium, Swelling index, FT-IR, Drug release

- **Tamoxifen Citrate Loaded Solid Lipid Nanoparticles- A Novel Approach In The Treatment of ER+ Breast Cancer.**

Borkar Sudarshan, Shende Vikas, Chatap Viveknand, Sawant Vilas, R Suresh, Dama Ganesh.....143

ABSTRACT

Breast cancer is one of the most frequently occurring cancers in women and the second leading cause of cancer deaths in women. Biodegradable SLNs of Tamoxifen citrate (Tmx) can be used for the targeting of anticancer drugs to the organs, thereby achieving major benefits such as reduction in total dose and avoidance of systemic absorption. Solid lipid nanoparticles (SLNs) were prepared by O/W Microemulsion technique and characterized by various parameters such as particle size analysis, scanning electron microscopy, drug entrapment efficiency and in-vitro release studies. In-vitro release studies were performed in phosphate buffer of pH 7.4 along with 0.5% SLS for increasing the solubility of lipophilic drug in PBS using Franz diffusion cell by dialysis method. The kinetics of release was determined and fitted to an empirical equation. The Tmx-loaded tristearine SLNs shown maximum entrapment efficiency compared to the glycerol monostearate SLN. Percentage of tamoxifen citrate released from SLN formulations up to 8 hrs was in the range of 32.3 to 65.5% with Tristearine and 43.2 to 81.4% with Glycerol monostearate (GMS). Tristearine had shown slow release and maximum entrapment than GMS which can be attributed to the hydrophobic long chain fatty acids of the triglyceride that retain lipophilic drugs and also increased accommodation of lipophilic drugs. Thus the above mentioned solid lipid nanoparticles can be a beneficial system to deliver tamoxifen to cancer tissues through enhanced permeability and retention (EPR) effect.

KEYWORDS: Solid lipid nanoparticles; Tamoxifen citrate; Microemulsion Technique; Triglycerides.

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Plant products serve as an alternative to synthetic products because of local accessibility, eco-friendly nature and lower prices compared to imported synthetic products. Natural gums and mucilage have been widely explored as pharmaceutical excipients. Mucilage extracted from *Anacardium occidentale* (Ao) were subjected to toxicity studies for its safety and preformulation studies for its suitability as a binding agent. The present study was undertaken with an objective to find out the binding potentials of a natural gum obtained from plant *Anacardium occidentale*. Physicochemical characteristics of mucilage, such as solubility, swelling index, loss on drying, and pH were studied and also microbial load was determined. The mucilage was evaluated for its granulating and binding properties in tablets, using Diclofenac as a model drug. Properties of the granules prepared with diclofenac using five different concentrations (2, 4, 6, 8 and 10% w/v) of Ao mucilage and compared with starch (10%, w/v), as standard binder. The prepared granules were evaluated for percentage of fines, average particle size, total porosity, compressibility index and flow properties. The tablets were prepared and evaluated for content uniformity, hardness, friability, disintegration time and *in vitro* dissolution profiles. The tablets had good physicochemical properties, and the drug release was more than 90% within 90 min. The tablets prepared by using 10% mucilage as binder exhibited more hardness than by using 2, 4 and 8% concentration. At 6% concentration it has given similar disintegration time and dissolution profile in comparison to starch at 10 % w/v. Hence, Ao mucilage at 6% w/v concentrations can be considered as ideal concentrations for preparation of tablets.

KEYWORDS: *Anacardium occidentale* Mucilage, binding, tablets, diclofenac, swelling index.

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KEYWORDS: carbopol, poloxamer 407(Pluronic F-127®) diclofenac potassium. Simulated lacrimal fluid

- **Physicochemical Characterization of Solid Dispersion of Cefixime with Poloxamer 188**

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KEY WORDS: Cefixime; Solid dispersion; Poloxamer 188; Freeze drying; Dissolution rate; Binary system

- **Design and Evaluation of Ranitidine Hydrochloride Floating Tablets for oral controlled release.**

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ABSTRACT

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Keywords: Floating controlled delivery system, Ranitidine Hydrochloride, Hydroxypropyl methylcellulose K_{4M}, Carbopol-934.

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