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Formulation and Evaluation of Orodispersive Tablets of "Ebastine" Using Natural Super Disintegrant by Molecular Dispersion Technique

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Abstract:- Ebastine is a 2nd generation H1 receptor antagonist that is mainly indicated for allergic rhinitis and chronic idiopathic urticaria. In allergic conditions the patient become panic and will have difficulty to swallow tablet with a glassful of water. In such cases Orodispersive tablets will be a good solution for patient compliance and efficient dose regimen. Ebastine tablets are available in different strength i.e. 10 mg and 20 mg. The main objective of this project work was to developed and designed an Orodispersive tablets (ODTs) containing Ebastine 20 mg, using "Natural Super Disintegrants" by molecular dispersion technique including various pharmaceutical excipients with different strengths to enhance patient compliance and therapeutic value as compare with the available market brands. Orodispersive Tablets of Ebastine were formulated by molecular dispersion technique and using Natural Superdisintegrants such as Agar and Guar gum and other excipients like gelatin, sodium lauryl sulphate, microcrystalline cellulose, sweetening agent as Sodium saccharine, talc and magnesium stearate as lubricants, clove oil and lemon flavor as flavoring agent. Drug - excipients compatibility tests performed before start the formulation. The selection and the rejection of excipients for experimental formulation was considered after getting the result of drug excipients compatibility study. The flowability of the powder mixtures were evaluated using Carr's index, Angle of Repose and the Hausner's ratio. The tablets were evaluated according to the standards prescribed by British Pharmacopoeia like weight variation, thickness, hardness, friability, disintegration time, a simulated wetting test and in-vitro dissolution. Prepared tablets after Optimization showed disintegration time less than 30 seconds and drug dissolution of about 75% within 30 minutes. The prepared tablets of optimized batch tested for stability 40 degree Celsius and 75% RH for 3 months and were found to be stable. Prepared Orodispersive tablets of Ebastine 20 mg from optimized batch were found bioequivalent under fasting and fed conditions with the available market products. The determination and evaluation were made for the most effective type and optimal amount of "Natural Super Disintegrants" for the manufacture of Orodispersive Tablets by molecular dispersion & direct compression technique.

I. INTRODUCTION

Tablet measurements structure is the most well-known medication conveyance frameworks which are viewed as the least demanding and most reasonable method of organization of the medication to a patient with the utilization of a glass of water. So, tablets are the most best measurements structure involves the biggest and the most critical spot as contrast with other dose structures. There are various sizes relating to the portion of the medication which can be given just as the state of the tablet. A few tablets may contain as low as 1 mg or less of the medication, and others contain 1.5 g. of the dynamic medication per tablet, which gives an immense scope of medication content. Tablet dose structures can be made in various sizes and shapes, and the medication fixing may contain 0.1% to 90% of a tablet mass. The assembling of tablets is very simple when contrasted with other measurements structure. The soundness issues are extremely less too. Creation yield is likewise high and is the most affordable. Especially in the event of present-day mechanical strategies including the cycle of Direct Compression Technique (DC).

Direct Compression is the most straightforward, monetary and financially savvy producing procedure which would now be able to be applied to Orodispersive tablets, Fast dissolving Tablets, Mouth dissolving tablets and so on due to the accessibility of huge scope of exceptionally improved excipients like tablet normal super disintegrants, semi engineered disintegrants, manufactured excipients, strands and sugar-based excipients.