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REVIEW ON DICLOFENAC SODIUM TABLETS

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ABSTRACT

A crucial component of product development,formulation development affects a pharmaceutical product's lifetime, patentability, and eventual success. The goal of formulation development is to identify the best possible dosage form, ingredient. list, and manufacturing process for pharmaceuticals. It is an extremely important step since it entails creating a medicine in a form that is stable and palatable for the patient.Pharmaceutical formulation development is the process of successfully developing a commercial product from the discovery of a new drug substance. Scientists must first identify the best path to effective drug delivery based on patient need, then optimise the formulation's properties using their understanding of the drug product's processing requireme nts and bioavailability.

Introduction:-

The method of creating a finished medicinal product with the appropriate dose form by combining various chemicals, drugs, and excipients. For effective distribution and product stability, pharmaceutical items are manufactured using precise dose forms.Determining the ideal dosage form, content, and manufacturing process for pharmaceutical goods is the goal of formulation development. Medicinal dosage forms come in a variety of forms, including: oral tablets, capsules, solution

Aim :

The purpose of this study is to formulate and evaluate diclofenac sodium floating tablets that are gastro-retentive.

Objectives :

The following are the primary broad Objectives ofthe current study:

1. To research formulation development knowledge.
2. To comprehend the process of making diclofenacsodium pills.
3. To comprehend the various steps involved in producing diclofenac sodium tablets.
4. To research how diclofenac sodium tablets areevaluated.
5. To research the various tools used in tabletpreparation.
6. To comprehend how diclofenac sodium pills areused.

Tablet compression devices:

A mechanical device with fast speed is the tablet press. It precisely compresses the components into the desired tablet shape.Although tablets are typically round or oval, they can be made in a variety of forms.

Principle:

Hydraulic pressure is the fundamental idea underlying the tablet compression device. Through the static fluid, this pressure is conveyed without being decreased. Any Static fluid transfers externally applied pressure to all directions in an identical ratio. Additionally, it enables the force to be multiplied as necessary.

Evaluation:

Hardness Test:

This test allows you to assess a material's strength, ductility, and wear resistance in order to decide if it is appropriate for the intended use.Placing the tablet between two jaws allows us to measure its hardness. After that, one of the jaws advances towards the tablet, pressing it up against the stationary jaw till it shatter. Next, the load across the diameter at which the tablet breaks down is noted.

Fig. Hardness Diclofenac sodium tablet testing

Weight variation:

The weight variation test's goals are to guarantee good manufacturing procedures (GMP), the right tablet size, the consistency of the formulation's content, and the safety, identity, and quality of the product. To conduct a weight variation test, each of the twenty tablets is weighed separately, the average weights are determined, and the weights of each tablet are compared to the average. The significance of weight. Variation in Weight = (IW-AW)AW X 100 percent Whereas, IW: Personal weight AW: Mean body weight

Friability test :

The friability test measures how much powder separates or is lost from the tablet's outer surface when it is handled mechanically and physically during transportation. We weighed the tablet sample and then put it into a revolving drum for the tablet friability test. After that, the drum is turned 100 times. To determine the percentage of weight reduction, the sample was reweighed.

Activity:

Making of the granules:

- Isopropyl alcohol, diclofenac, HPMC, MCC, and 10% sodium bicarbonate were combined equally, then the resulting granules were sieved through a 16-mesh screen and dried for one hour at 30 °C in a tray dryer.
- Preparation of Tablet :Following the granules' full drying, mix 5% sodium chloride, talc, citric acid, and magnesium stearate.The blend was compressed into tablets having an average weight of 250 mg using a tablet punching machine in a die having a diameter of 8 mm, punches with a compression force of 7 tons. sodium chloride, talc, citric acid, and magnesium stearate.The blend was compressed into tablets having an average weight of 250 mg using a tablet punching machine in a die having a diameter of 8 mm, punches with a compression force of 7 tons.

Result and Discussion:

A) Identification test

1) White colour
2) Odour Lacklustre Odour
3) Crystalline Physical Form
4) Dissolvability Poorly soluble in water,soluble in acetone

B) Melting Point:

Diclofenac sodium was discovered to have a melting point of 280 degrees Celsius.

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