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Formulation and Evaluation of Rapidly Dispersible Tablets of Karpooradi Churna

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Abstract
The dosage uniformity and patient compliance can be increased and adulteration can be decreased in ayurvedic powders by formulating them into tablets. A rapid dispersible tablet system can be defined as a dosage form for oral administration, which when placed in mouth, rapidly disperses and can be swallowed in form of liquid. Karpooradi churna is widely used in ayurvedic system for the treatment of chronic respiratory diseases and for anorexia. This is given in churna preparation. Hence an attempt was made to develop orodispersible tablets of karpooradi churna using a super disintegrant in different concentrations. Preformulation studies indicated that the churna was not free flowing Hence wet granulation technique was employed to prepare tablets. The granules were compressed into tablets by incorporating a superdisintegrant sodium starch glycolate. Among the prepared formulations some showed satisfactory results.

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I. Introduction

In literature, Setty C.M, *et al,* prepared dispersible tablets of some Ayurvedic Churnas was in the various concentration of superdisintegrants like sodium starch glucolate(SSG), Coscarmellose sodium(CCS), (pc).

Herbs are highly esteemed source of active principles which themselves are therapeutically active, relatively safe and are free from toxic effects and hence are considered as better choice to treat diseases, when compared to allopathic medicines. The oral route of administration still continues to be the most preferred route due to ease of administration, accurate dosing, self-medication, versatility but has limitations in its ability to allow effective drug absorption for systemic drug action. A rapid dispersible tablet system recently is popular as Novel drug delivery system because they are easy to administer and lead to better patient compliance.

The objective of the study was to formulate rapid dispersible tablets of karpooradi churna using sodium starch glycolate as superdisintegrant which could provide hard and rapid dispersible tablets, release drug within 2 minutes.

II. Methods

Preformulation[1,2]: The churna was subjected to preformulation studies like angle of repose and compressibility index.

Wet Granulation[2, 3]: The active ingredients, lactose, disintegrant (Sodium lauryl sulfate, SLS) and super disintegrant (Sodium starch glycolate) at different concentrations such as 4%, 8%, 12% and 16% were mixed in a porcelain mortar was later mixed by adding a liquid binder, potato starch (5%) in order to convert powder blend in to a coherent mass. The wet granules were first passed through sieve no.10 and were dried in hot air oven. After drying, the granules were passed through sieve no 18 and 60 respectively. A dry lubricant (5%) is then added & the granules were compressed on a single station flat –faced punch of table compression machine.

Evaluation [2,3]: Various studies such as general appearance, weight variation, hardness, friability, wetting time and disintegration tests were evaluated

TABLE I: COMPOSITION OF RAPIDLY DISPERSIBLE TABLETS

Ingredients	**F1**	**F2**	**F3**	**F4**
Drug	10g	10g	10g	10g
Lactose	1.8g	1.4g	1g	600mg
Sodium Lauryl Sulphate	300mg	300mg	300mg	300mg
Sodium Starch Glycolate	0.4g	0.8g	1.2g	1.6g
Potato Starch	q.s	q.s	q.s	q.S

Talc	500mg	500mg	500mg	500mg

TABLE II: CHARACRERISTICS OF GRANULES

Formulation	Angle of repose(^{0})	Compressibility index(%)
F1	34.62	23.07
F2	39.45	25.01
F3	35.30	22.76
F4	32.13	21.28

Figure I: Compressed Tablets of Karpooradi Churna

III. Results And Discussion

From the results it was found that churna was not free flowing and wet granulation method was used for compression into tablets. The tablets were evaluated for hardness, weight variation, friability, wetting time and disintegration time.

Evaluation studies showed that tablets have appreciable hardness with rapid disintegration. The friability of formulations indicated that the tablets were mechanically stable. The weight variation of formulations was acceptable and was in the range of ±9**%.**

The disintegration time of formulation was around 2 minutes. Formulation 4 showed rapid disintegration which contains 16% sodium starch glycolate. The wetting time was found to be in decreasing order as F1<F2 <F3 <F4.

IV. Conclusion

All formulations F1, F2, F3 and F4 were made by wet granulation method. Pre compression and post compression parameters were evaluated. The results indicated that formulation F4 containing 16 % sodium starch glycolate was rapidly dissolving.

Reference

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[3]. Nikhil Prashant A. et al., Jour. of Sci. Res. in Phar. 2012, 1(2), 79-81