Scienxt Journal of Pharmacology & Toxicology
Volume-1 || Issue-2 || May-Aug || Year-2023 || pp. 1-15

Comparative study of post-compression parameters of branded and generic product containing metformin hydrochloride

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Abstract:

Metformin hydrochloride (HCl) belongs to biguanides and used to treat type 2 diabetes mellitus (T2DM). Various brands and generic version of metformin hydrochloride tablets are available in the market with a common claim that they are all bioequivalent. The main objective of the present experiment was to evaluate post compression parameters of brand, generic and self- prepared metformin hydrochloride tablets containing 500 mg of drug and to determine whether all the formulations used were equivalent or significantly different. Tablets were prepared by direct compression method. In the preparation of the metformin hydrochloride tablets microcystalline cellulose, potato starch and crospovidone were the main ingredients. All the formulation including branded, generic and self-prepared metformin hydrochloride were evaluated for post compression parameters like hardness, weight variation, drug content, disintegration time and *in vitro* dissolution profile and results were found to be within the prescribed limit. There was no significant difference between drug release profile of brand and generic product procured from market. Formulations A1 and A2 has taken less time to disintegrate as compared to formulations A3 and A4; this is because of the use of super distintegrant i.e., Crospovidone. All the findings and outcomes have shown that branded, generic product and in-house formulations exhibit good response.

Keywords:

Metformin hydrochloride (HCL), T2DM (Type 2 Diabetes mellitus), Crospovidone, Potato starch.