



Analysis of Naproxen 500 mg Caplets from Different Brands Available in the Iraqi Market: A Comparative In-vitro Study

Abstract:

Naproxen, a non-steroidal anti-inflammatory drug, has been used widely for its analgesic, antipyretic, and anti-inflammatory activities. Based on that, this medication has many brands available in the Iraqi market. These numerous brands confuse doctors and patients about which is the best in terms of good quality and the exact quantity of active ingredients. Accordingly, this research is conducted to perform an *invitro* comparative study to evaluate different brands of naproxen caplets available in Iraqi market (as whole and splitted caplets), with a price evaluation. With regard for the intact caplet investigations, the weight, size, friability, and content uniformity values of the caplets of all tested brands were acceptable, while the caplets' hardness results were above the limits, especially for brands B and D. The disintegration times of these brands were within the limits, except for brand C that exceeded the limits with a large margin. Concerning the dissolution rate inspection, all brands fell within the pharmacopeial limits, but in the case of the 5-min drug release percentage comparison, which was linked straightly to the onset of action, brands A and B were superior. A similarity factor study revealed that brands A and B were similar regarding their dissolution profiles, while brands A and C were the most dissimilar. On the other hand, the splitted caplet investigation included weight, weight variation and uniformity, average accuracy percentage and content uniformity percentage analysis. The results of most of them occurred within acceptable limits. One of the most important parameters that directly affect patient compliance with the medication is the price and how it is linked with the effectiveness. On this matter, the best price: effectiveness ratio was found in brands E and B.