ABSTRACT

Effect of Wetting Agent at Premixing Stage on Physical Characteristics and Dissolution of Piroxicam Orally Disintegrating Tablet
(From Piroxicam – Lactose – PVP K-30 – Tween 80 Granules Produced by Fluid Bed Granulation Method)

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Development in technology have presented viable dosage alternatives to people who have difficulty taking conventional solid dosage forms, including pediatric, geriatric, the mentally ill and the disabled called Orally Disintegrating Tablet (ODT). Orally Disintegrating Tablets are solid dosage forms that disintegrate or dissolve rapidly (less than 60 seconds) in the mouth without water.

The aim of this study was to observe the effect of wetting agent (tween 80 and PVP K-30) at premixing stage on physical characteristics and dissolution of piroxicam Orally Disintegrating Tablet. Different wetting agent were used in this study such as tween 80 0.5 % of piroxicam (F1), PVP K-30 0.5 % of piroxicam (F2), combination of tween 80 and PVP K-30 each 0.25 % of piroxicam (F3).

Tablets were compressed by hydraulic press at 0.5 tons pressure and diameter of the die was 10 mm. Then, the tablets were evaluated in physical characteristics (hardness, friability value, and disintegration time) and dissolution. The result of hardness of F1 – F3 were 2.01 ± 0.07 kP; 2.38 ± 0.07 kP; and 2.34 ± 0.12 kP, friability were 1.71 ± 0.11 %; 3.27 ± 0.23 % kP; and 2.08 ± 0.21 %, disintegration times were 21.67 ± 1.53 s; 10.33 ± 0.58 s; and 16.33 ± 0.58 s, and for solubility percentage in 45 minutes were 83.04 ± 0.87 %; 87.57 ± 3.70 %; and 72.68 ± 3.23 %.

From this study it could be concluded that formula which used PVP K-30 only as wetting agent gave the best result because it had fastest disintegration time and highest solubility percentage in dissolution test.

Keywords: Orally Disintegrating Tablet, Piroxicam, Wetting Agent, Tween 80, PVP K-30, Physical Characteristics, Dissolution.