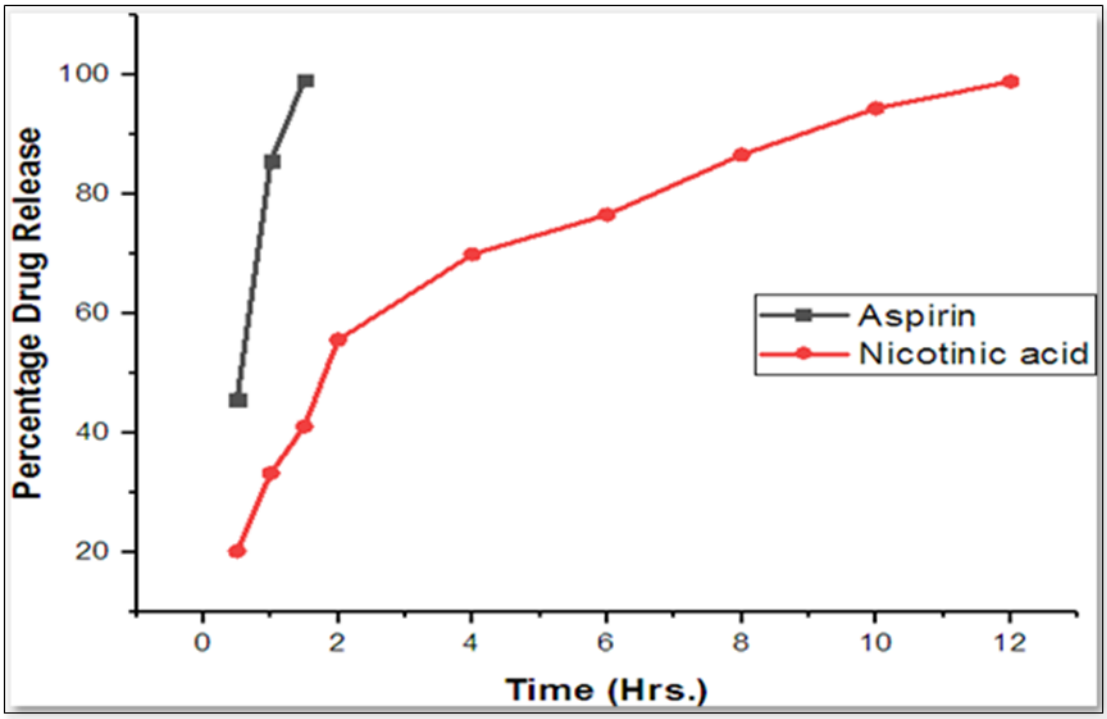

Figure 11. Graph of release of bilayer tablets.

A dissolution study shows the release of Aspirin and Nicotinic acid. The Instant layer of Aspirin release approx. 99.12 percent drug within 1.5 h and control layer Nicotinic acid shows release up to 12 h approx. 98.95 percent of drug release in 12 h.

SUMMARY

Fast dissolving (Instant Layer) tablets of Aspirin were prepared by direct compression method after incorporating different super disintegrants such as, croscarmellose sodium (Ac-Di-Sol), crospovidone and sodium starch glycolate in different concentrations. The prepared tablets were evaluated for pre-compression and post-compression parameters.

The loose bulk density (LBD) and tapped bulk density (TBD) of the powders of different formulations were evaluated before the compression of powders in to tablets. The bulk density and the tapped density for all the formulations varied from 0.319 to 0.357gm/cm^3 and 0.424 to 0.464gm/cm^3 respectively.

The values obtained lies within the acceptable range. The difference exists between the bulk density and tapped density found to be very few. This result helps in calculating the % compressibility of the powder. The result of Hausner's ratio of all formulations ranges from 1.290 to 1.345. The results of the Compressibility index of all the formulations ranges from 22.455% to 25.176%. Results clearly showed that the flow ability of all the formulations was good and also the powder had good compressibility.

The thickness of the tablets was reported in the micrometer(mm). The thickness of tablet indicates that, die fill was uniform. The thickness depends on the size of the punches (8mm) and the weight of one tablet (150mg). The value of thickness ranges between 2.1±0.3 to 2.6±0.2mm.

Friability determines the strength of the tablets. friability for all the formulations was below 1% indicating that the friability was within the prescribed limits. The results of friability test indicate that the tablet possesses good mechanical strength. The friability value ranges from 0.621±0.024 to 0.853±0.015.

The mean hardness values were measured for all the formulation using Monsanto hardness tester. The hardness value ranges from 3.2±0.3 to 3.6±0.2kg/cm^2. Twenty tablets were randomly selected from each formulation and evaluated. The obtained data were almost uniform. The values of tablets average weight ranging from 145±5 to 154±3mg. All the tablets passed weight variation test as the % weight variation was within the USP Pharmacopoeia's limits of ±5% of the weight.

The % drug content of all the formulated tablets were found within the limit. % Drug content value of drug was within 98.64±0.15% to 99.86±0.25%. The results within the range indicate uniform of mixing.