Short Communication

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COMPARISON OF DISSOLUTION RATES OF DIFFERENT COMMERCIAL ASPIRIN TABLETS

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The rate of dissolution of drug particles play a fundamental role in determining drug availability *in vivo* [1] and generically indetical aspirin tablets made by different manufacturers exhibit such difference [2]. The present report gives the basic dissolution data on commercially available aspirin tablets in Pakistan.

EXPERIMENTAL

Five brands of plain aspirin tablets were examined. The dissolution behaviour of these tablets was investigated using the USP XIX method. Dissolution was followed at 60 rev/min. All the experiments were at 37° in 0.1 *N* HCl. 10 ml of the sample were taken at different time intervals (5, 15, 30, 60 min) and analysed spectrophotometrically after appropriate dilutions. Unicam spectrophotometer model Sp-200 was used.

RESULTS AND DISCUSSION

Rates of dissolution of commercial aspirin are shown in Table 1. Dissolution behaviour was compared on the basis of the time required for half the drug (150 mg) to go in solution. Differences are quite apparent particularly between brand E and D and the remaining brands. In each instance, however, the dissolution is rapid at first and then decreases in a non-exponential manner.

It has been reported earlier that rate of gastro-intestinal absorption of aspirin (administered in tablet form) is limited by the dissolution of drug in gastro-intestinal fluid [3]. Although *in vitro* dissolution measurement is not necessarily correlated with bioavailability in human subjects, the results do indicate the possibility of differences in availability of active component *in vivo*.

Table 1. Dissolution characteristics of commercial aspirin tablets (300 mg).

Product	5 min. Amount in solution mg	15 min. Amount in solution mg	30 min. Amount in solution mg	60 min. Amount in solutiom mg	Dissolution half time.
A	172.78	214.32	253.00	291	Less than 5 min
B	163.07	214.32	261.12	287.63	Less than 5 min
C	160.5	200.16	245.5	289.3	Less than 5 min
D	222.9	265.2	279.15	293.5	Less than 5 min
E	42.06	104.9	190.22	246.5	20 min

REFERENCES

1. J.G. Wagner, *Biopharmaceutics and Relevant Pharmacokinetics* (Drug Intelligence Publication, Hamilton, Illinois 1971) p 64.
2. *Ibid.*, p 166.
3. G. Levy, and B.A. Hayes, New Engl. J. Med., 262; 1053 (1960).