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## Studies on indomethacin-induced gastric mucosal erosions and their inhibition by 16, 16 dimethyl prostaglandin E<sub>2</sub> in the rat

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Mucosal erosion formation following indomethacin administration has been studied in the rat gastric

significant increases in H<sup>+</sup>-loss, Na<sup>+</sup>-gain and mucosal blood flow and a fall in potential difference indicating damage to the mucosal barrier.

The results may be compared with those of Chvasta & Cooke (1972) using topical indomethacin in the Heidenhain pouch dog and Main & Melarange (1977) using topical sodium taurocholate in the rat. Topical application of dimethyl PGE<sub>2</sub> inhibited erosion formation induced by indomethacin and, as shown previously (Main & Melarange, 1977), by sodium taurocholate.

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**Table 1** Effect of dose and route of administration of indomethacin on erosion formation

<i>Indomethacin</i>	<i>Route</i>	<i>pH</i>	<i>Number of preparations</i>	<i>Erosion index (mean ± s.e. mean)</i>
1 mg/ml	Topical	6.5	4	92.8 ± 15.5
1 mg/ml plus dimethyl PGE <sub>2</sub> 15 µg/ml	Topical	6.5	4	16.5 ± 4.7
2.5 mg/ml	Topical	1.0	4	20.0 ± 17.0
40 mg/kg	i.v.	—	5	19.5 ± 6.0
20 mg/kg	s.c.	—	4	38.0 ± 8.0

chamber preparation (Mersereau & Hinchey, 1973) using an experimental protocol similar to that described by Main & Melarange (1977).

Indomethacin was administered by topical application (one 30 min period), by i.v. injection or by s.c. injection prior to setting up the preparation. In the presence of acid, mucosal erosions formed and erosion indices were recorded (2 h after i.v. or topical indomethacin; 5.5 h after s.c. administration) (Table 1).

The high erosion index following topical indomethacin at pH 6.5 was associated with

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## Measurement of the facility of multiple choice examinations

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