In a separate group of rats having only a intrauterine balloon and jugular cannula parturition was allowed to commence.

Labetolol was given as a bolus injection intravenously after the 2nd or 3rd pup had been delivered. Parturition was arrested and prolonged in 2 out of 4 rats with 1 mg/kg and in 3 out of 4 rats with 10 mg/kg labetolol. These preliminary results suggest that labetolol in normotensive conscious pregnant rats is an effective hypotensive agent with little effect on uterine activity pre-partum, but which can interfere with the parturient process.

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Action of bradykinin on isolated rat whole uterus and longitudinal myometrial strip

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Bradykinin has been shown to release prostaglandins in a variety of organs including canine kidney (McGiff, Terragno, Malik & Lonigro, 1972), cat spleen (Ferreira, Moncada & Vane, 1973) and rat intestine (Crocker & Willaroys, 1976). Prostaglandins have been suggested to play a key role in myometrial contractility (Vane & Williams, 1973). The endometrium at least in the pregnant rat appears to be the major source (Williams, Sneddon & Harney, 1974).

This study describes a technique for obtaining a longitudinal myometrial preparation and investigates the action of bradykinin on the uterus. Virgin oestrous rats, 150–200 g were used. Uterine horns were mounted in a 15 ml organ bath containing Garcia de Jalons solution at 31°C and bubbled with 95% O_2 and 5% CO_2. A resting tension of 0.5 g was applied to each tissue, and isometric contractions recorded on a pen recorder. Myometrial preparations were obtained as follows. Uteri were everted and a glass rod placed in the lumen. With fine forceps, endometrial tissue was carefully removed intact. Histological studies demonstrated good separation with cleavage occuring mainly in the circular muscle band, resulting in a myometrial preparation consisting mainly of longitudinal muscle fibres. Myometrial preparations were set up as for whole uteri. Concentration-effect curves obtained with acetylcholine and prostaglandin $F_{2\alpha}$ were similar on both preparations, with the same maximal tensions being developed. The concentration-effect curve to bradykinin on the myometrial preparation was shifted to the right with a mean reduction of 12.9% of the maximal tension produced compared to that seen on the whole uterus. Indomethacin (10 μg/ml) depressed the maximal response of the whole uterus to acetylcholine by $9.9 \pm 2.2\%$ ($n=5$), to prostaglandin $F_{2\alpha}$ by $6.0 \pm 2.5\%$ ($n=6$) and to bradykinin by $18.3 \pm 3.3\%$ ($n=6$). The antagonism of bradykinin by indomethacin was significantly greater ($P<0.05$) from that of acetylcholine and prostaglandin $F_{2\alpha}$.

After obtaining constant maximal responses of the myometrial preparation to bradykinin and acetylcholine, prostaglandin $F_{2\alpha}$ (10 ng/ml) was added to the bath for 1 min and then washed out. Bradykinin and acetylcholine were then repeated. The maximal response to bradykinin was potentiated by $11.6 \pm 2.8\%$ ($n=4$) whereas that of acetylcholine only by $1.3 \pm 0.8\%$ ($n=4$).

These results suggest that the action of bradykinin on the uterus involves both a direct action on the myometrium and an indirect action via release of prostaglandin(s) from the endometrium.

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Studies on indomethacin-induced gastric mucosal erosions and their inhibition by 16, 16 dimethyl prostaglandin E_2 in the rat

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Mucosal erosion formation following indomethacin administration has been studied in the rat gastric 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 significant increases in H^+-loss, Na^+-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_2 inhibited erosion formation induced by indomethacin and, as shown previously (Main & Melarange, 1977), by sodium taurocholate.

R.M. is an M.R.C. Student. The prostaglandin E_2 was kindly provided by Dr J.E. Pike of the Upjohn Company, Kalamazoo.

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

Indomethacin	*Route*	*pH*	*Number of preparations*	*Erosion index (mean ± s.e. mean)*
1 mg/ml	Topical	6.5	4	92.8 ± 15.5
1 mg/ml plus dimethyl PGE_2 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

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Measurement of the facility of multiple choice examinations

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