up to 10 h. The mean cumulative urinary excretion of antibacterial activity in 10 h was 84·3% (S.D. of mean ±15·5) of the intravenous dose. The drug was well tolerated in all subjects both locally and systemically and no changes in hepatic and renal function or in haematological parameters occurred.

In one additional subject the various values measured were considerably different from those of the above volunteers *viz.*, serum level at 15 min 7·6 μg/ml, serum half-life 83·5 min and 10 h—cumulative urinary excretion 53·9%. The reasons for this are not known; renal and hepatic function in this subject were within the normal ranges.

CIBA 36,278A-Ba (25 mg/kg, i.v.) was given to groups of 5 male albino rabbits (*circa* 2 kg). Antibacterial activity rapidly appeared in the urine, the mean cumulative excretion in 3 h being 36·1%. No antibacterial activity was detected in the urine of these animals after this time. Probenecid (30 mg/kg, i.v.) administered immediaely before CIBA 36,278A-Ba decreased the mean recovery of antibacterial activity in the urine (24·8% in 3 h) and increased the mean serum half-life of antibacterial activity from 24·5 min in controls to 38·6 minutes. These results suggest that CIBA 36,278A-Ba is excreted both by glomerular filtration and active renal tubular secretion in the rabbit. Negligible quantities (<0·2% of the dose) of antibacterial activity were excreted in rabbit bile up to 2 h after administration of CIBA 36,278A-Ba.

The antibacterial activity in protein-free serum (30 min) and urine (0–2 h) of volunteers and rabbits receiving CIBA 36,278A-Ba possessed the same mobility as that of the unchanged compound on thin-layer chromatography in two solvent systems.

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Some clinical pharmacological effects of althesin (CT 1341)

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Some clinical effects of the intravenous induction agent althesin (CT 1341) were studied in two groups of six fit male patients undergoing minor elective surgery. The patients were premedicated with diazepam 10 mg orally and given oxygen by mask for approximately three min before induction. Althesin was used in a dose of 0·1 ml/kg body weight in one group and 0·05 ml/kg body weight in the other. Anaesthesia was maintained with halothane and oxygen delivered by mask through a Mapleson A circuit.

The respiratory pattern was recorded on a Mingograf 81 recorder from a pneumotachograph. The e.c.g. and BP record were similarly recorded. The BP was measured directly from a polyethylene catheter inserted percutaneously in the radial artery, from which blood samples were obtained for the determination of pO_2 pCO_2 and halothane concentrations. A fourth channel was used to record the e.e.g. from two frontal electrodes. In addition, the e.e.g. signal was transmitted over a telephone data link to an Elliott 903 computer for on-line frequency analysis.

Althesin produced rapid anaesthesia in all patients. Apnoea followed induction in every patient given the larger dose (mean duration 146 s) and in five patients given the smaller dose (mean duration 36 s). This difference in duration of apnoea was significant ($P<0.05$). In group one the arterial pCO_2 rose from 38 mmHg before induction to 50·5 mmHg at the end of apnoea, and in group two from 34 mmHg to 43·5 mmHg. Both these rises were significant ($P<0.001$).

The heart rate increased in every patient from a mean of 62 beats/min to a mean maximum of 88/min in the first group and from 68/min to a mean maximum of 88/min in the second group. This maximum rate was always reached within 1–2 min of induction, and no dysrhythmias were observed. Simultaneously, the mean BP fell in five patients in group one (73 mmHg to 54 mmHg) and in all patients in group two (81 mmHg to 68 mmHg).

The e.e.g. records of patients in group one showed periods of suppression of activity after induction, which were not seen in patients in group two. Frequency analysis of the e.e.g. in all patients produced consistent spectra before and after induction. The pre-induction spectra were all fairly flat over the range 5–30 Hz with a large but variable amount of lower frequency activity, probably caused by movement artefacts. After induction, a distinct change developed in the shape of the spectra ; the amplitude of the e.e.g. decreased linearly with increase of frequency. This pattern has also been observed following thiopentone induction and during deep halothane anaesthesia.

The equipotent dose ratio of diamorphine and morphine administered by mouth

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Terminal cancer patients prescribed a diamorphine and cocaine elixir were randomly divided into diamorphine and morphine receiving groups. The traditional diamorphine:morphine dose potency ratio of 1:2 was initially accepted as correct. Thus, patients in the morphine group prescribed, say, diamorphine 10 mg were supplied with a mixture containing morphine 20 mg/dose. The study was 'double-blind' and increases in 'diamorphine equivalents', though not cocaine, were made as needed. Maximum doses supplied were diamorphine 40 mg and morphine 80 mg/dose.

On account of the limited shelf life of diamorphine solutions (Rizzotti, 1935), any still unused after two weeks was discarded. After death a record was made of the maximum dose of diamorphine or morphine received orally by patients who