SUMMARY

SUMMARY

In spite of the great and recent advances in general anaesthesia and anaesthetic techniques, local analgesic drugs still have a prominent place in the practice of anaesthesia especially in the hospitals of rural areas with deficient equipments for general anaesthesia.

Before local anaesthesia came into light, general anaesthesia has been in clinical use for about 38 years. The introduction of cocaine in 1884 by Karl Koller as a local surface anaesthetic for the eye represented an important landmark in starting the history of regional anaesthesia.

Thereafter, the field of local anaesthesia expanded quickly to include infiltration, nerve block and later spinal and epidural analgesia. Beside the use of local anaesthetics to produce analgesia by different routes, diagnostic purposes and its role in management of chronic pain constitute other indications for its use.

Although the exact mechanisms of action are not yet completely explored, the theories, discussed as proposed mechanisms of action are outlined. These include: the surface-charge theory and the membrane expansion theory.

The pharmacological properties of the various

local anaesthetic agents which are clinically important include potency, speed of onset and duration of anaesthetic activity. The clinical profile of the individual agents is essentially determined by the physico-chemical characteristics of the various compounds, which in turn are dependent on their chemical structure. The physico-chemical properties which influence anaesthetic activity are lipid solubility, protein binding and PKa.

In general, the local anaesthetics can be classified into three groups:

(1) Agents of low potency and short duration, for example procaine and chloroprocaine,

(2) agents of moderate potency and duration, for example lignocaine, mepivacaine and prilocaine; and

(3) agents of high potency and long duration, for example amethocaine, bupivacaine and etidocaine.

These local anaesthetics also vary in term of onset: chloroprocaine, lignocaine, mepivacaine, prilocaine and etidocaine have a rapid onset, while procaine, amethocaine and bupivacaine are characterized by a longer latency period.

Being increasingly used by anaesthesiologists, it is of vital importance to be aware of toxic reactions that might be encountered. This has been briefly discussed as toxic reactions secondary to a high blood level of

local analgesic drug, rarely allergic together with a variety of other miscellaneous reactions. Management and treatment of such reactions have also been dealt with.

There are different techniques for local anaesthesia. These are: central neuronal blockade (spinal, epidural and candal) and peripheral neuronal blockade (surface, infiltration, nerve block, and intravenous regional anaesthesia). Each technique has its own indication in anaesthetic practice and in the management of chronic pain.