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ENDOSULFAN POISONING IN MAN: A CLINICOPATHOLOGICAL STUDY

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Endosulfan is a new insecticide, used increasingly in the Dry Zone of Sri Lanka. Categorised under chlorinated hydrocarbons, Endosulfan has no antidote, and its poisoning carries a high mortality in man; no guidelines are available for treatment. This study was started to gather basic clinicopathological information on Endosulfan poisoning, with a view to formulating a management strategy.

We studied 32 consecutive patients with Endosulfan poisoning admitted to G.H. Anuradhapura from July to November 1997. The clinical features were studied prospectively, or in the case of death on admission (DOA), obtained from the transfer form or the relatives. Autopsy samples of brain and other organs, avaialble in 10 cases, were examined using haematoxylin and eosin stain, and also with oil red (O) for neutral lipids.

The 32 patients (age 13-50 yr., 21 males) had ingested the poison with suicidal intent. Recurrent or continuous generalised seizures were the dominant symptom in all. Twelve patients required ventilatory assistance. Of the total, 21 (66%) died (8 DOA, 8 within 1 hr of admission, 3 in 1-3 hr, and 2 after 1 wk and 4 wk respectively). In the 10 autopsied cases, the brain was oedematous. The other abnormalities were: diffuse micro- and macrovesicular fatty change in the liver without necrosis, congestion and oedema in the lungs, and haemorrhages in the adrenals, stomach, and oesophagus.

The cerebral oedema, which is related to the recurrent seizures, presumably was the immediate cause of death; the pulmonary oedema was probably neurogenic or secondary to aspiration. Micro- and macrovesicular fat diseases occur in widespread hepatic metabolic disturbance involving mitochondria and ribosomes, valproate, salicylate, and *Thevetia* ('Kaneru') being some of the toxic causes. Thus, the changes in the liver indicates a disturbance at subcellular level in Endosulfan poisoning. In its management, drugs to reduce cerebral oedema may prove useful.