decreasing temperature. Cardiac massage at a reduced rate is the usual treatment in such cases. In contrast, Niazi and Lewis¹ described one hour of asystole at 9°C in controlled hypothermia; their patient reattained spontaneous sinus rhythm during superficial rewarming.

Our patient was ventilated as if he were normothermic, thus generating alkalosis. This is controversial² but has been advocated by some clinical investigators.³ He had asystole on arrival at hospital. It is not clear when this began, but serious arrhythmias may occur when hypothermic patients are handled—for example, when they are lifted on to or from stretchers.

The initial drop in temperature that occurred in our case is a well-known phenomenon when superficial rewarming is used and should not discourage staff from continuing the resuscitation. Core rewarming requires trained staff and more expensive and sophisticated equipment such as a heart-lung machine, peritoneal dialysis, and peritoneal lavage. This case supports previous suggestions^{4,5} that in the treatment of accidental hypothermia successful results may be attained without resort to sophisticated equipment.

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Oral contraception in patients with hyperprolactinaemia

Prolactin-secreting pituitary tumours have oestrogen receptors¹ and may enlarge rapidly during pregnancy² or oestrogen administration.³ Hence oestrogen-containing oral contraceptives are usually contraindicated in hyperprolactinaemia. Bromocriptine, however, inhibits the increase in animal pituitary weight and mitotic activity induced by oestrogens.⁴ We have therefore tried to determine whether the medical control of hyperprolactinaemia could be maintained after introducing oral contraceptive treatment.

Patients, methods, and results

We studied 10 women aged 23 to 36 years; five had radiological evidence of pituitary tumour. In each patient at least three pretreatment prolactin concentrations exceeded 800 mU/l (MRC 75/504). All had taken bromocriptine for 11 to 58 months (mean 25 months) before starting oestrogen treatment. Doses (5-25 mg daily) were adjusted individually until prolactin concentrations were no longer raised and then maintained unchanged throughout the study. Blood samples were taken on days 12, 19, and 26 of the menstrual cycle immediately preceding oral contraceptive treatment. Minilyn (ethinyloestradiol 50 µg, lynoestrenol 2.5 mg) was started on the fifth day of menstruation, being taken as one tablet daily for 22 days followed by six days without treatment to complete each course. Further blood samples were taken after 7, 14, and 21 days in the first and third courses. Sera were stored at -20°C and the prolactin concentration measured by radioimmunoassay against MRC standard 75/504, the nine samples from each subject being measured together and in triplicate. Mean intra-assay coefficient of variation was 7.9%. Right lateral and posteroanterior skull x-ray pictures were taken before Minilyn and repeated at intervals of six to 12 months.

One of the 10 subjects took bromocriptine only intermittently. Another had headaches and stopped the Minilyn after only one week. These two patients were therefore excluded from the analysis of prolactin results. The figure shows the serum prolactin concentrations in the remaining eight patients. When taking bromocriptine alone the serum prolactin concentration was below the limits of assay sensitivity in one subject but normal in the others. There was no overall change in prolactin concentrations during

Minilyn, and comparison of concentrations at 7, 14, and 21 days showed no short-term trend within each cycle. Three patients complained of nausea or breast enlargement while taking Minilyn.

Eight of the 10 patients continued with Minilyn after the three-month sampling period and when last seen had completed six to 19 months of treatment (mean 13 months). Further prolactin concentrations remained within the normal range. Follow-up skull radiographs were obtained in nine patients after two to 19 months (mean 11 months), and in none was there any evidence of progressive pituitary enlargement. In one patient with gross unilateral expansion of the pituitary fossa there was diminution in the size of the fossa during 11 months of treatment with bromocriptine plus Minilyn.

Serum prolactin concentrations in eight patients taking Minilyn showing no overall change during first three months. Each point represents mean of three observations taken at weekly intervals. Normal range for serum prolactin 60-360 mU/l.

Comment

Oestrogen-related side effects were noted in three patients but there was no overall change in serum prolactin concentrations, and medical control of hyperprolactinaemia was well maintained. One patient had headaches during the first week of taking the contraception, but the relevance of this could not be assessed. In no other subject was there any evidence of progressive pituitary enlargement, and in one patient the pituitary fossa actually became smaller while taking oestrogens.

We conclude that oestrogen-containing oral contraceptives may be used in patients with hyperprolactinaemia and pituitary tumours, provided that serum prolactin concentrations are first restored to normal with bromocriptine and that bromocriptine is continued. Close supervision is required. In patients who cannot use other forms of contraception oestrogen-containing contraceptives with bromocriptine may be safer than an unplanned pregnancy.

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