

Human chorionic gonadotropin is of no value in the management of obesity

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It has recently come to our attention that a number of practitioners are still using daily deep intramuscular injections of human chorionic gonadotropin (HCG) as an adjunct in the management of obesity. We condemn, in terms that cannot possibly be misconstrued, such use of HCG.

The use of HCG for the treatment of obesity was suggested by Simeons in 1954.¹ Simeons was greatly influenced by Frölich, who, in 1901, had reported the case of a boy with hypogonadism and obesity due to a pituitary tumour. It thus became fashionable some 40 years ago to diagnose Frölich's syndrome in obese children with delayed sexual development and to treat them with chorionic gonadotropin derived from the urine of pregnant women.

Simeons believed that "in most cases of obesity the distribution of excess fat somewhat resembles that found in Frölich's syndrome" and thought it worth while to try deep intramuscular injections (125 IU per injection) of HCG, once daily 6 days a week for 6 weeks, combined with a diet supplying 500 to 550 Cal (2100 to 2310 kJ) per day. In 1954 he reported that "the average daily loss of weight was 250–600 g, without any inconvenience being caused, even in patients doing a hard day's work."¹ Since then, daily deep intramuscular injections of the same amount of HCG have been used as an adjunct in the management of obesity with great commercial success.²

Those who promote such use of HCG argue that patients can lose weight at an accelerated rate, and that even if they do not, there is less discomfort during dieting; in those who do not lose any weight, the fat is redistributed from the thighs and buttocks to other parts of the body.^{3,8}

Guggenheim,⁹ commenting on the controversy over endocrine manipulation in the management of obesity, stated:

No treatment should be dismissed out of hand because it does not produce cures. Rather, it should be evaluated for the long term effects of its direct and indirect morbidity and mortality. The risks of a treatment need to be weighed against the risks of the disease. In some cases, one must choose the lesser of the two evils.

Six double-blind studies (Table I) have been conducted since 1973 in an attempt to validate the claims that

daily deep intramuscular injections of HCG are beneficial in obese patients. With the exception of the 1973 study by Asher and Harper,¹⁰ whose methods have been severely criticized,¹⁶ treatment with HCG was found to be of no benefit in terms of weight loss, the patient's feeling of well-being or a more esthetic distribution of fat.

HCG is sold in Canada under the trade name A.P.L. for use in the treatment of prepubertal cryptorchidism not due to anatomic obstruction and in selected cases of hypogonadotropic hypogonadism secondary to a pituitary deficit in males.^{17,18} Occasionally it is used to evoke ovulation.¹⁹ The monograph for A.P.L. states:¹⁷

HCG has no known effect on fat mobilization, appetite or sense of hunger, or body fat distribution . . . HCG has not been demonstrated to be effective adjunctive therapy for obesity. There is no substantial evidence that it increases weight loss beyond that resulting from caloric restriction, that it causes a more attractive or "normal" distribution of fat, or that it decreases the hunger and discomfort associated with calorie-restricted diets . . . [Adverse effects may include] headache, irritability, restlessness, depression, fatigue, edema, precocious puberty, gynecomastia, pain at the injection site.

Table I—Clinical trials of human chorionic gonadotropin (HCG) in the management of obesity

Investigators, year of report, no. of patients	Study protocol	Results
Asher and Harper, ¹⁰ 1973, n = 40	Randomized, double-blind*	Improvement, but HCG-treated patients were given more doses
Young and colleagues, ¹¹ 1976, n = 202	Randomized, double-blind, cross-over*	No benefit
Stein and associates, ¹² 1976, n = 51	Randomized, double-blind*	No benefit
Shetty and Kalkhoff, ¹³ 1977, n = 6	Randomized, double-blind; in hospital†	No benefit
Miller and Schneiderman, ¹⁴ 1977, n = 19	Prospective, double-blind, cross-over*	No benefit
Greenway and Bray, ¹⁵ 1977, n = 20	Randomized, double-blind*	No benefit

*Deep intramuscular injections, 125 IU/d for 6 days a week for 6 weeks, combined with a diet supplying 500 to 550 Cal (2100 to 2310 kJ) daily.

†Deep intramuscular injections, 125 IU/d for 30 days, combined with a diet supplying 500 Cal daily.

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Other reported adverse effects of treatment with HCG include the following:²⁰⁻²²

- An ovarian overstimulation syndrome, with edema and cyst formation in the ovary, and intra-abdominal hemorrhage requiring laparotomy.

- Multiple pregnancy, with an increased prevalence of immaturity, abortion, perinatal death and pre-eclampsia.

- Ascites, pleural effusion and other symptoms caused by salt and water retention and edema formation.

- Hypercoagulability and thromboembolism.

Because HCG is ineffective in the treatment of obesity, patients may become discouraged and so not seek or accept treatment that might help them. HCG injections are expensive in both patients' time and physicians' fees and may therefore divert resources from areas of real contribution to the health of the community.

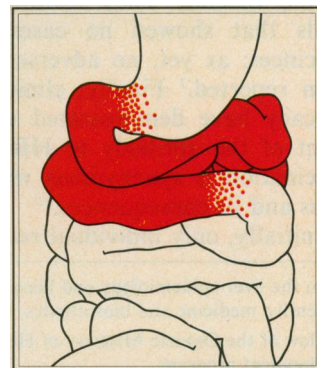
Because HCG "therapy" in the management of obesity has been thoroughly discredited and thus rejected by the majority of the medical community, any practitioner whose patients experience undesirable side effects as a consequence of such therapy may face civil and even criminal liability.

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