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# Chewing the fat about hCG and weight loss

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## Introduction

A pharmacist calls the BC Drug & Poison Information Centre about a patient who is presenting with a prescription written by a naturopath for hCG 200 IU SC daily. The patient says it's for weight loss and is asking about side effects. The pharmacist wonders if hCG is indicated for weight loss and if naturopathic physicians are allowed to prescribe it?

## What is hCG?

hCG (human chorionic gonadotropin) is a glycopeptide hormone produced by the human placenta and excreted in the urine of pregnant women.<sup>1</sup> It is essential for early maintenance of the corpus luteum during pregnancy and for normal development of testes in the male fetus.

## Theory in weight loss

The concept of using hCG for weight loss dates back nearly 60 years when British endocrinologist Albert Simeons advocated the use of low dose chorionic gonadotropin injections (125 IU daily for six days per week) as an adjunct to a very low calorie diet (500 kcal daily) for the treatment of obesity.<sup>2</sup> He observed weight loss and body fat redistribution in males treated with hCG for a hypogonadal disorder called Frolich's syndrome and he theorized that the same would be observed in patients with "simple obesity." He proposed that hCG helped patients tolerate the low calorie diet by reducing hunger and weakness, and in 1954 he reported that over 500 patients had successfully lost 20 to 30 pounds using his method.

## Evidence for effectiveness

Simeons' method has been controversial from the beginning. A 1969 editorial on the subject called for additional study and questioned the role of hCG as a weight loss therapy.<sup>3</sup> In 1995, a meta-analysis of eight uncontrolled and 16 controlled trials examining the effects of hCG in the treatment of obesity concluded there was no scientific evidence that hCG brought about weight loss or fat redistribution, nor did it reduce hunger or induce a feeling of well-being.<sup>4</sup> Nevertheless, Simeons' method continues to be promoted in the popular media and by alternative medicine practitioners. A recent commentary suggests that Simeons' observations in patients with Frolich's syndrome were misinterpreted and that weight loss observed in patients with simple obesity is due to the low calorie diet and nothing else.<sup>5</sup>

## **hCG products and possible adverse effects**

Currently, there are three injectable hCG products in Canada. Chorionic Gonadotropin for Injection® and Pregnyl® are both available in unreconstituted 10,000 unit vials and derived from the urine of pregnant women.<sup>6,7</sup> Ovidrel® is derived from recombinant DNA and is available as choriogonadotropin alpha measured in micrograms.<sup>8</sup> These products are indicated for the treatment of female infertility and selected hormonal disorders in men. Serious adverse effects are a possibility and the U.S. Food and Drug Administration (FDA) has received reports of depression, pulmonary embolism, cerebrovascular events, cardiac arrest, and death associated with the use of "off-label" hCG injections.<sup>9</sup> Several homeopathic hCG preparations intended for oral administration may also be available but these are not expected to be pharmacologically active and are considered "illegal" by the FDA.

## **Recommendations**

Naturopathic physicians are restricted from prescribing choriogonadotropin alpha (Ovidrel®) but, for reasons that are not clear, the same restrictions do not apply to the other injectable hCG products.<sup>10</sup> Hence, whether pharmacists dispense prescriptions for injectable hCG intended for weight loss comes down to a matter of ethics. Given the lack of evidence showing efficacy and the potential for serious adverse events, pharmacists may choose not to fill such prescriptions. Pharmacists choosing to dispense prescriptions for injectable hCG should ensure their patients are informed of the risks.

*by Rob Gair, BSc (Pharm), CSPI*

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