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Effect of opiate receptor blockade on the insulin response to oral glucose load in polycystic ovarian disease.

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Abstract

In order to test the hypothesis that endogenous opiates are at least partially responsible for hyperinsulinaemia in patients with polycystic ovarian disease (PCOD), the effect of naloxone (an opiate receptor blocker) on the insulin response to oral glucose load (OGTT) was studied in 20 women with PCOD and 17 control subjects at days 5-8 of their follicular phase. After fasting overnight for 10-12 h, each woman received an i.v. bolus injection (2 mg) of naloxone or an equal volume of saline infusion followed by a constant infusion of naloxone or saline solution at a rate of 8 ml/h (1 mg/h of naloxone) for 5 h. OGTT (75 g) was performed 1 h after the bolus injection. The naloxone study was performed 48 h after the saline study. Naloxone did not modify the insulin response to OGTT in either group. When the data were related to the insulin response, in PCOD hyperinsulinaemic patients, naloxone significantly reduced (P less than 0.02) the insulin response to OGTT without any change in glycaemic response curves. In control and PCOD normoinsulinaemic patients, naloxone did not change significantly either the glycaemia or the insulin levels after OGTT. No change of gonadotrophin and steroid secretion was found in any patient receiving naloxone. In conclusion, endogenous opiates may play a significant role in hyperinsulinaemia in PCOD.