



Clinical Case Study

Hypertriglyceridemia induced acute pancreatitis managed with low dose intravenous Insulin.

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Introduction

Hypertriglyceridemia (HTG) is the third most common cause of Acute Pancreatitis (AP). The mechanism of hypertriglyceridemia-induced pancreatitis is postulated to involve hydrolysis of triglycerides (TG) by pancreatic Lipase and release of free fatty acids that induce free radical damage.

Insulin acts by activating lipoprotein lipase (LPL) which is a hydrolytic enzyme that enhance removal of TG from plasma. Insulin can be used to treat HTG in diabetic and non-diabetic patients; it is competitive to other modalities as plasmapheresis in cost and availability. Infusion of Insulin is likely to be more effective than using subcutaneous route. The appropriate dose and duration of insulin in this context need to be further elucidated [1].

Observation

A 35-years old non-diabetic male presented with upper abdominal pain and vomiting for the past three days. He is known to have previous HTG induced AP five years ago. Examination of abdomen elicits epigastric tenderness, pulse rate 105 bpm, blood pressure 127/66 and temperature 37.2C. Pancreatic enzymes at presentation: Amylase 739 U/L (50-150 U/L), Lipase 1289 U/L (10-140 U/L) and TG 1208 mg/dl (40-170 mg/dl). Serum Creatinin is 0.98 mg/dl (0.6-1.3mg/dl), ALT 21 IU/L (8-32 IU/L), CRP 1.46 mg/dl (< 6 mg/dl). The electrocardiogram was normal. Explanation was given to the patient that use of Insulin for HTG induced AP is not included in the local guideline but well recognized treatment option; his HTG induced AP was managed with low dose soluble insulin infusion in a dose of (0.5U/h) along with intravenous fluid, antibiotic, analgesia and he was kept nil per mouth. A total of 10 U of Actrapid® insulin was infused over 20 hours daily for two days then Fenofibrate was reinstated when he started oral intake. The patient was closely monitored for glucose level hourly as well as for potassium and magnesium. There was substantial reduction in TG level from 1208 down to 646 mg/dl after 12 hours and to 218 mg/dl after 36 hours, normalization of pancreatic enzymes after 48 hours (Amylase 82 IU/L, Lipase 77 IU/L). The patient discharged after 3 days after favorable evolution .

Discussion

Acute Pancreatitis caused by HTG is likely to be more severe with higher rate of complications compared to other etiologies [2,3] Therefore; rapid lowering of HTG is a priority as it improves outcome of AP [4]. Insulin emerges as safe and effective agent in lowering Triglyceride level within few days.

The dose of insulin is widely variable among different studies, ranging from as low as 0.1-0.3 U/kg/h to higher doses of 6-10U/kg/h, which are usually needed in diabetic patients [5,6]. The duration of Insulin therapy is another variable among reported cases; it ranges between 2-4 days. In non-diabetic patients lower doses of Insulin are usually used [7]. Although we used the lowest reported dose ; however, it was safe and effective to lower hypertriglyceridemia within two days.

Conflict of Interest: None

References

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