



Propofol as a Cause of Recurrent Pancreatitis in A Child with ESRD; A Cautionary Tale

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Received: 27 July 2018 / Accepted: 11 December 2018 / Published online: 4 January 2019
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To the Editor: An 8-y-old girl with end stage renal disease (ESRD) secondary to focal segmental glomerulosclerosis had been on chronic peritoneal dialysis (PD) since age of 2 y. She had altered lipid profile owing to her native renal disease. She had 2 episodes of refractory bacterial peritonitis at age of 4 and 7.5 y respectively warranting the catheter removal under general anesthesia (GA). Both episodes were followed immediately by clinical and laboratory proven acute pancreatitis (AP) which were managed conservatively and uneventfully. Imaging studies were normal. The work up for AP was normal. A review of medications received during anesthesia was done and Propofol had been used as an induction agent in both episodes. Propofol is known to precipitate AP in patients with underlying hypertriglyceridemia (as in our index case) and it was decided to avoid Propofol for any forthcoming surgeries such as transplant *etc.*

Children with ESRD on PD are at risk of AP due to multiple factors like:

1. Chronic infusion of a large amount of fluid with a non-physiological composition under non-physiological high intra-abdominal pressure can render the pancreas more susceptible to parenchymal damage;
2. Impaired microvascularisation and hypoxemia induces premature activation of proteolytic enzymes, thereby provoking acute pancreatitis;
3. The composition of the dialysate may also (indirectly) influence factors known to be related to acute pancreatitis such as induction or aggravation of hyperglycemia because of high glucose concentrations;

4. Preexisting conditions leading to hyperlipidemia such as nephrotic state can also predispose to pancreatitis;
5. Increased concentrations of pancreatic stimulating hormones together with the high prevalence of morphological changes may render the pancreas more susceptible to stimuli that potentially provoke acute pancreatitis. [1]

Our index child had multiple risk factors to develop AP but the onset of the disease was same in both scenarios and extensive work up was unremarkable. Hence the possibility of drug induced pancreatitis was kept as first differential.

Propofol, 2,6-diisopropylphenol, is available as a 1% solution in an aqueous solution of 10% soybean oil, 2.25% glycerol, and 1.2% purified egg phosphatide (lecithin). Propofol being a fat based emulsion can cause pancreatitis by increasing the levels of triglycerides. Kumar et al. reported a patient who developed pancreatitis following propofol infusion who developed a recurrence when inadvertently re challenged by propofol. [2]

Caution should be given to anesthetist to avoid Propofol in children with renal failure who have high triglyceride levels.

Compliance with Ethical Standards

Conflict of Interest None.

Source of Funding None.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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