Anaphylactic shock with intravenous 20% lipid emulsion in a young patient: Should we ask about soybean allergy beforehand?

Sir,

Though use of intravenous lipid emulsion (ILE) is increasing in intensive care unit (ICU), anaphylactic shock following ILE with ongoing septic shock is not reported.

A 19-year-old student was admitted to ICU in 3rd week of severe acute pancreatitis with septic shock and renal injury. He was kept on vasopressor infusion, mechanical ventilation and broad spectrum antibiotics and antifungal (meropenem and amphotericin) and renal replacement therapy. On 4th ICU day we decided to add ILE (Fresenius Kabi, Bad Homburg, Germany) in his parenteral nutrition. Few minutes after starting of 1st ILE bottle, nursing-in-charge noted that patient's need of vasopressors was increasing. Noradrenaline requirement increased up to 0.5 mcg/kg/min within 20 min of exposure and vasopressin infusion had to be started @0.04 U/min. Patient was febrile (38.5°C) also. Other injections (antibiotics) were going on infusion pump since last 4 h. On close observation, we found rashes on the chest and forearm area [Figure 1]. On auscultation, there was bilateral diffuse ronchi. We found epiglottis and laryngeal edema on video-laryngoscopy [Figure 2]. We stopped ILE immediately and injected hydrocortisone 100 mg, pheniramine 1 amp intravenously and 1 mg of adrenaline intramuscularly. Blood samples (drawn immediately) showed serum total IgE level 100 kU/L. Retrospectively, we got the positive history of soybean allergy and a history of severe hypotension requiring vasopressors, 2 years back while undergoing short general anesthesia (probably with propofol). However, there was no history of egg allergy or hyper-reactive airway disease.

Allergen skin testing with intralipid and propofol were positive while some antibiotics (penicillin) were negative. He could be successfully extubated and discharged from ICU.

Comments

Intralipid contains soybean oil, egg lecithin and glycerol in an isotonic solution.[1,2] In our case, suspicion of anaphylaxis was

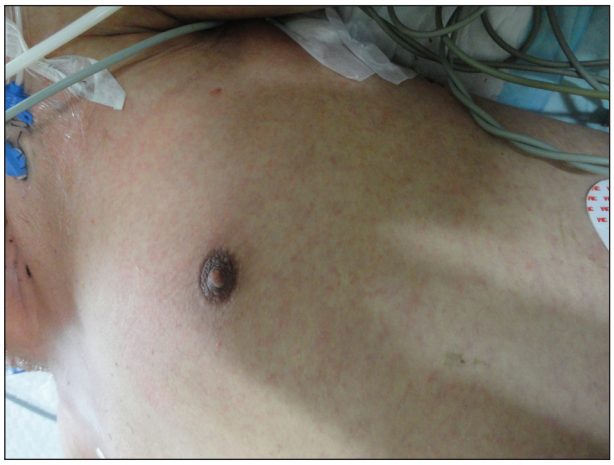

Figure 1: Rashes following exposure of intralipid in this patient

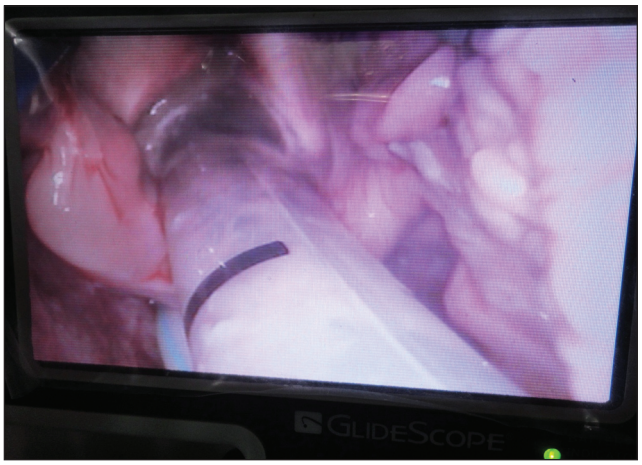

Figure 2: Video: Laryngoscopic view of laryngeal edema in this patient

supported by new onset rash, increasing vasopressor requirement and rapid shock reversal after adrenaline and lastly raised total IgE also. Subsequently, soybean allergy was confirmed by history and skin test. According to Naranjo probability scale method of adverse drug reaction, this case is possible type (Naranjo total score >8).[3]

Propofol (having same composition of ILE) causes anaphylaxis due to its egg and soybean components.[1,2] In a case of propofol induced anaphylaxis, patient showed immediate reaction to skin prick with 20% intralipid also.[1] Anaphylaxis following ingestion of generic drug (omeprazole) containing soybean oil is reported.[4]

Fever with hypotension (increasing vasopressor requirement) in an ICU setting of ongoing septic shock mostly indicates a new onset sepsis and septic shock or worsening of existing septic shock.[5] Anaphylactic shock often mimics septic shock by decrease in systemic vascular resistance.[5] Especially, if both shock co-exists in a patient, it is very difficult to differentiate.

Through our report, our clear message is before starting ILE one has to ask history of soybean and egg allergy and intradermal test is to be done before starting infusion.

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Website: www. ajts. org	**Quick Response Code:**
DOI: 10.4103/0973-6247.137460	