

# Apnea as a Complication of Intravenous Immunoglobulin Therapy in a Neonate

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*To the Editor:* Intravenous immunoglobulin (IVIG) is used in neonates as an adjunctive therapy in Rh hemolytic disease (RHD). We report a neonate developing apnea after its use.

A second gravida O Rh-negative mother delivered a premature (35+5 wk, 2075 g) baby boy. Her first child did not have any neonatal jaundice. She never received anti-D immunoglobulin and anti-D titer was not done. At birth the neonate (O Rh-positive) was clinically normal. Icterus was evident at 11 h. Investigations revealed hemoglobin - 12.8 g/dl, total serum bilirubin (TSB) - 6.4 mg/dl, reticulocyte count-18 %, positive indirect Coomb's test and evidences of hemolysis in peripheral smear. Intensive phototherapy was started but TSB increased to 15.4 mg/dl at 42 h, and first double-volume exchange transfusion (DVET) was done. Second DVET was done at 96 h at TSB of 18.4 mg/dl. To avoid further DVET, IVIG infusion (1 g/kg) was planned. Normal human immunoglobulin, well within the expiry date, was used.

Infusion was started at 1 ml/kg/h in a separate line. After 10 min of starting infusion, the neonate went into sudden apnea, bradycardia and desaturation which responded to positive pressure ventilation (PPV). Infusion was stopped immediately. There was no feature of anaphylactic reaction, shock, hypo/hyperthermia, hypoglycemia, hematuria and dyselectrolytemia. It was difficult to decide whether the apnea was induced by IVIG or it was mere coincidence. IVIG infusion was restarted after 1 h at a reduced rate (0.5 ml/kg/h). Within 2 min the neonate went into apnea again and needed PPV. The drug was discarded. The baby remained stable

thereafter. Complete blood count, sepsis screen including blood culture, coagulation profile and renal function test remained normal.

Adverse events of IVIG varies widely from 1 to 81 % [1]. Their etiology remains uncertain, but IgG aggregates and complement activation appear to be involved [2]. Immediate reactions are usually mild and transient including headache, facial flushing, malaise, fever, chills, dyspnea, vomiting, diarrhea, hypo/hypertension and tachycardia [3]. Acute kidney injury, necrotizing enterocolitis, hypoglycemia, hemolytic anemia, leukopenia, neutropenia, disseminated intravascular coagulation and severe deep vein thrombosis have been reported in neonates [3, 4]. Apnea has never been reported before and we emphasize the need for cautious use of IVIG in neonates.

**Conflict of Interest** None.

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