

**Bridge Over Troubled Waters: Therapeutic Apheresis in a Patient with Thyrotoxicosis with Severe Hepatic Complications and Liver Cirrhosis from Chronic Hepatitis B infection**

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**Background:** Thyroid storm is an endocrine emergency with high mortality rates of 20-30%. Hepatic dysfunction is commonly observed in patients with thyroid disease, manifesting as abnormal liver function test in 15-76%. This complicates the treatment of thyroid storm with thionamides, which are metabolized in the liver. Plasmapheresis is described in case reports as a treatment option for thyroid storm where conventional treatment failed.

**Case.** We report a case of a 32 year-old Filipino female admitted in our institution for abdominal pain. She is a known case of Grave's Disease and Chronic Hepatitis B infection. She was managed as a case of Thyroid storm and Acute liver failure from hyperthyroidism on top of liver cirrhosis from Chronic Hepatitis B with high infectivity. The liver failure prevented the service from giving thionamides. One session of therapeutic plasma exchange with fresh frozen plasma was done which led to rapid decline in the thyroid hormones: 86% decline in FT3 (from 16.4 to 2.2); 3% decline in FT4 (from 72.71 ng/dL to 70.3 ng/dL); 125 times increase in TSH (from 0.0002 to 0.0251 uU/mL); and antibodies: 25% decline in TRAb (from 719.95 to 537.99 IU/mL) and 17% decline in Anti-TPO (from 182.38 to 150.68 IU/mL) six hours after the procedure. This was associated with rapid clinical improvement in thyrotoxic symptoms. The effect lasted biochemically for 24 hours and clinically, for six days. Hepatitis B infection was simultaneously treated with Tenofovir.

**Discussion and Conclusion.** Thyroid dysfunction from hyperthyroidism and chronic liver disease complicates treatment of thyroid storm. Plasma exchange is a viable treatment option to rapidly achieve decline in the thyroid hormones among patients in thyroid storm for which thionamides cannot be administered. It can be used as a bridge to definitive treatment of radioactive iodine or surgery. Further, in patients with chronic liver disease, early definitive treatment for Grave's disease should be a goal to lessen exposure to hepatotoxic anti-thyroid medications.

**Biography**
Dr. Everly Faith Ramos is a third year medical resident at the Philippine General Hospital. She obtained her Doctor of Medicine degree from the Uinveristy of the Philippines College of Medicine. She has previously published research studies in the Asian Journal of Biology Education and Acta Madica Philippina.

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