

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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Thyroid storm is an endocrine emergency with a high mortality. Plasmapheresis at usual volumes of 40-60ml/kg is described in case reports as a treatment option for thyroid storm where thionamides are contraindicated.

We report a case of a 32 year-old Filipino female admitted at our institution for abdominal pain. She is known to have Graves' 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 plasmapheresis with fresh frozen plasma performed at low volumes 30ml/kg due to recent hypotension led to a rapid decline in thyroid hormones and antibodies: 86% decline in FT3, 3% decline in FT4, 25% decline in Anti-Tg, 17% decline in Anti-TPO six hours after the procedure. This was associated with rapid clinical improvement in thyrotoxic symptoms. The AST dropped by 74% and the ALT by 56%. The effect lasted biochemically for 24 hours and clinically for 6 days. Hepatitis B infection was simultaneously treated with Tenofovir.

Co-existing liver disease complicates treatment of thyroid storm. Low volume plasma exchange is a viable temporizing measure to rapidly achieve decline in thyroid hormones among patients in thyroid storm for which thionamides cannot be administered and for which usual volume plasma exchange may be deemed unsafe. Early definitive treatment with thyroidectomy or radioactive iodine is recommended for Graves' Disease patients with concomitant liver disease.