

Plasma Exchange as a Novel Treatment Strategy in a Thyrotoxic Patient with Drug-induced Pancytopenia and Stroke who subsequently underwent Thyroid Surgery

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This report gives an account of the utility of plasmapheresis for treating a thyroid storm patient with drug induced pancytopenia and to bridge a euthyroid state prior to thyroidectomy. A 77-year old gentleman with a 15-year history of hyperthyroidism secondary to Grave's Disease with ophthalmopathy, taking Methimazole, Azathioprine, and Prednisone, was admitted for sorethroat, fever, and cough. He was managed as drug-induced pancytopenia, febrile neutropenia, pneumonia, and herpetic ulcers. Interim, he developed dyspnea, leg edema, tachycardia that developed into atrial fibrillation that necessitated transfer to the ICU wherein he needed ventilatory support. Significant work-ups showed chest x-ray with significant progression of bilateral reticulonodular and hazy opacities, elevated free triiodothyronine (FT3) 5.58 pg/ml and free thyroxine (FT4) 4.55 ng/dl and suppressed level of thyroid stimulating hormone (TSH) 0.046 uIU/ml. Anti-thyroid receptor antibodies (TRAb) were elevated at 6 U/L (Normal < 1 U/L). He also developed an acute stroke with left hemiplegia and anisocoria; seen as infarct on the right frontotemporoparietal areas on CT scan. Patient underwent plasma exchange for six sessions and significant reduction of FT4 (1.21 ng/dl), FT3 (2.4 pg/ml), and TRAb (0.37 U/L) were observed. Blood indices improved and his condition stabilized. He subsequently underwent total thyroidectomy, tracheostomy, percutaneous endogastric tube insertion and was eventually weaned from the ventilator. Ultimately, he was discharged from the hospital. In this successful case management, plasmapheresis normalized thyroid hormone levels, decreased levels of autoantibodies, could be an alternative modality for drug-induced pancytopenia and was preoperative management for thyroidectomy due to life-threatening thyrotoxicosis.