**The Deadly Propranolol-Induced Hyperkalaemic Cardiac Arrest Complicating the Treatment of Hyperthyroidism and Thyroid Storm: A Case Series**

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| **Introduction**  Propranolol is a non-cardio-selective beta-blocker that is preferably used in the management of thyrotoxicosis or thyroid storm (TS) to control sympathomimetic effects in addition to blocking peripheral conversion of T4 to T3. Propranolol-induced hyperkalaemia has been reported in cases of infantile haemangioma but has never been documented in the management of thyroid crises.  **Case description**  Case 1  A 32-year-old gentleman with a history of hyperthyroidism presented with acute breathlessness, fever and cough. Vitals showed heart rate of 109 beats/min, and temperature of 39.1 °C. Electrocardiography (ECG) revealed atrial fibrillation with rapid ventricular response. He was diagnosed with TS with Burch-Wartofsky score (BWS) of 55. He was treated with propylthiouracil , lugols iodine, hydrocortisone, and propranolol. After 6 hours , patient developed asystole. Potassium increased from 5 to 8 mmol/L. Patient succumbed despite on treatment for hyperkalaemia.  Case 2  A 54-year-old gentleman with a history of ischaemic heart disease presented with breathlessness. He was referred from a district hospital which, he was treated for acute heart failure and subclinical hyperthyroidism. He was started with non-invasive ventilation and administered with carbimazole and propranolol. On day 5 of admission, he was hypoxic and eventually required intubation and mechanical ventilation. ECG revealed alternating pseuso-Brugada type 1 and type 2. Patient developed pulseless electrical activity. Potassium increased from 4.6 to 6.2 mmol/L. Despite treatment, patient died due to refractory hyperkalaemia.  Case 3  A 31-year-old gentleman presented with chest pain associated with diarrhoea. Vitals showed heart rate of 140 and temperature 38.8 °C. He was treated for TS precipitated by pneumonia with BWS score of 70. He was given propylthiouracil, lugols iodine, hydrocortisone, and propranolol. 5 hours later, patient became hypoxic and distress. He required intubation and mechanical ventilation. Pre-arrest ECG revealed junctional rhythm with tall-tented T-waves. Potassium increased from 4.5 to 10.2 mmol/L. Patient succumbed despite on treatment for hyperkalaemia.  **Discussion/Conclusion**  Propranolol-induced hyperkalaemia is an unexpected, potentially life-threatening adverse effect. Research has shown the risk of circulatory arrest in thyroid storm patients treated with propranolol. Cardio-selective beta-blockers are a safer option for treatment for tachycardia in TS, especially in those with preexisting thyrotoxic cardiomyopathy. |

**Keywords:** Propranolol, hyperkalaemia, thyroid storm.