Introduction: In 2010, the estimated numbers of men and women with AF worldwide were 20.9 million and 12.6 million, respectively, with higher incidence and prevalence rates in developed countries. By 2030. Palpitations are one of the most common symptoms of hyperthyroidism. Between 10% and 25% of hyperthyroid patients have atrial fibrillation (AF), with the higher end of that range accounting for hyperthyroid patients aged 60 and older; conversely, only 5% of hyperthyroid patients under age 60 have AF.

Methods: 38 years-old male came to ED with palpitation that accompanied by dyspnea since 4 months ago. Patient already known have AF but didn't controlled since 3 years ago. SOB (+), PND and orthopnea were declined. Blood pressure was 130/80 with HR 140-150 bpm and RR 32 tpm. From physical examination revealed moist rales bibasilar. The ECG revealed AF RVR with LVH. From laboratory findings was only found hypocalcemia. We calculated the wayne index and found the total score was 23. Then we performed bed side echocardiography with the result EF 55%, global normokinetic, LVH, moderate MR and mild AR. There were dilatation on LA, RA and RV. We assess the patient as Atrial Fibrillation Unstable (due to acute heart failure) with Susp Hyperthyroid. We paln to performed electrical cardioversion. Unfortunately after 3 times of cardioversion (up to 200 J), the patient still in RVR. We try to give digoxin 0.5 mg intravenous but there was no satisfying result. The we gave PTU, lugol and propanolol (for hyperthyroid) concomitanly with diuretic (for congestive). We also correct the imbalance electrolyte. In the second day, the patient sill refractory AF RVR. Then we uptitrated the dose of propanolol for the patient but the arrhythmia still refracted. In the third day, the patient was asked to discharged from hospital even he still in rapid AF.

Result: Patients with hyperthyroidism can develop a life threatening complication called thyroid storm or crisis, requiring urgent therapy with beta blockers, antithyroid medication and iodine. Patients with hyperthyroidism can develop a life threatening complication called thyroid storm or crisis. AF and atrial flutter management presents unique challenges in patients with associated hyperthyroidism. The usual guidelines should be followed except that efforts to restore sinus rhythm are ordinarily delayed until the patient is euthyroid. This reduces the likelihood of the rhythm reverting to atrial fibrillation. The principle objectives in treating atrial fibrillation associated with hyperthyroidism are rate control, prevention of thromboembolism, and restoration of sinus rhythm. But unfortunately, even we already followed the guideline, the patient still have a refractory arrhythmia.

Conclusion: AF in hyperthyroid patient is a challenging case. In unstable AF condition, electrical cardioversion is mandatory even in our case the result is unsatisfactory.