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Role of peak systolic velocity of inferior Thyroid artery in the differential diagnosis of thyrotoxicosis

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Radioactive Iodine Uptake Scan (RAIU) is the investigation of choice in differential diagnosis of thyrotoxicosis. Our study evaluated the diagnostic utility of Peak Systolic Velocity (PSV) of Inferior Thyroid Artery (ITA) on color Doppler ultrasound (CDU) in patients with thyrotoxicosis by comparing with RAIU scan and also determined a specific cut off for PSV of ITA to discriminate accurately between Graves' disease and (painless and sub-acute) Thyroiditis. Over 15 months, 143 patients were selected out of 231 patients with thyrotoxicosis. CDU of Thyroid and RAIU scan was performed in 98 patients. RAIU diagnosed Thyroiditis in 52 patients and 46 had Graves' disease. Mean TSH, FT3 and FT4 in Graves' disease was 0.0214+0.028 μ IU/ml, 9.682+6.04 pg/ml and 4.186+1.60 ng/dl respectively. Mean TSH, FT3 and FT4 in Thyroiditis was 0.0433+0.040 μ IU/ml, 3.602+3.34 pg/ml and 4.027+1.91ng/dl respectively. Mean 2hr and 24hr uptake was 33.07% and 62.38% in Graves' disease and in Thyroiditis it was 6.41% and 11.46% ($P<0.01$). Patients with Graves' disease had higher PSV of ITA (63.19+22.85 cm/s) than patients with Thyroiditis (16.90+6.54cm/s); $P<0.01$. PSV>36 cm/s differentiated all patients with Graves' disease from Thyroiditis. Thus CDU of Thyroid is a cost effective diagnostic tool and is comparable to RAIU scan for the diagnosis of Graves' disease or destructive Thyroiditis. The unique aspect of study was exclusion of patients with obvious clinical features like neck pain and fever in Thyroiditis and infiltrative orbitopathy in Graves' disease which enabled us to study the role of CDU when it is required the most.

Biography

Roopal N Panchani completed her MD in Internal Medicine from Baroda Medical College, Maharaja Sayajirao University, Gujarat and her super specialization in Endocrinology (DNB Endocrinology) from Sir Ganga Ram Hospital, New Delhi; a premier academic institution of India. She has delivered talks as an invited speaker in 13 conferences, organized about 15 patient education workshops on various topics and served as chairperson and panelist in many conferences. She has 14 publications, 24 poster presentations and 5 oral presentations to her merit. She has a bag full of awards to her merit including the Best Resident Doctor of Sir Ganga Ram Hospital.

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