

Title-Evaluation of thyroid blood flow parameters in differentiation of thyrotoxicosis

Objectives:

To evaluate the utility of peak systolic velocity of superior thyroid artery (PSV-STA) and a novel parameter (ratio of peak systolic velocity of superior thyroid artery to peak systolic velocity of common carotid artery(STA-PSV/CCA-PSV ratio)in differentiation of Graves' disease and thyroiditis presenting with thyrotoxicosis.

Methods:

A total of 111 patients with newly diagnosed thyrotoxicosis without antithyroid medication or β -blockers use and 45 age and sex matched healthy subjects as control were included. Thyroid function tests and thyroid autoantibody titres were done.All subjects underwent a detailed color-flow Doppler ultrasonography of the thyroid gland and spectral flow analysis of thyroid and carotid arteries.

Results:

On Doppler study, the mean STA-PSV of patients with Graves' disease was significantly higher than thyroiditis and control group ((92.79 \pm 44.95 cm/sec, 37.89 \pm 15.33 cm/sec, 20.07 \pm 6.77cm/sec respectively(p <0.001). Similarly, STA-PSV/CCA-PSV ratio was significantly higher in Graves' disease (0.65 \pm 0.32) than thyroiditis (0.30 \pm 0.11)(p <0.001).STA-PSV greater than 54.275 cm/s had 82.9% sensitivity and 86.2% specificity in diagnosing Graves' disease. On the other hand, STA-PSV/CCA-PSV ratio (0.40) had a similar specificity (86.2%) albeit with a slightly lower sensitivity (80.5%) compared to STA-PSV.

Conclusions:

The mean STA-PSV and STA-PSV/CCA-PSV ratio have high sensitivity and specificity in differentiating Graves' disease from thyroiditis and should be used routinely in clinical practice.

Name of corresponding author- Dr. SwayamsidhaMangaraj

Address for correspondence- Mishra Colony, Near Andhra Bank, Mangalabag, Cuttack, Odisha-753007

Telephone / Mobile Number- 09861431077

Email id- drsmangaraj@gmail.com