

# Clinical implication of F-18 FDG PET/CT for differentiated thyroid cancer in patients with negative diagnostic iodine-123 scan and elevated thyroglobulin

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## **ABSTRACT**

### **Background**

This study aims to investigate the usefulness of F-18 FDG PET/CT in differentiated thyroid cancer (DTC) with elevated serum thyroglobulin (Tg) but negative iodine-123 (I-123) scan.

### **Methods**

Twenty patients with histopathologically proven DTC, negative diagnostic I-123 scan, and elevated serum Tg levels were prospectively submitted to F-18 FDG PET/CT evaluation. The histopathologic findings consisted of 19 papillary thyroid cancers, 1 follicular thyroid cancer.

### **Results**

F-18 FDG PET/CT identified lesions in 18 out of 20 patients, giving a sensitivity of 90%. Thirteen of the 18 patients revealed limited loco-regional disease. Remaining 5 patients showed distant metastases, consisting of 4 patients with lung metastases and 1 patient with bone metastasis. Two patients revealed negative F-18 FDG PET/CT findings.

### **Conclusion**

F-18 FDG PET/CT is suitable for the detection and precise localization of loco-regional recurrences and distant metastases of DTC in patients with elevated serum Tg but negative I-123 whole body scan.