ORIGINAL ARTICLE

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Metaiodobenzylguanidine (MIBG) uptake in Parkinson's disease also decreases at thyroid

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Background: Decreased cardiac metaiodobenzylguanidine (MIBG) uptake was reported in Parkinson's disease and this contributes to the differential diagnosis between Parkinson's disease and other forms of parkinsonism such as multiple system atrophy. However, decreased MIBG uptake of the thyroid has not been demonstrated. ***Objective:*** To compare MIBG uptake of the thyroid among Parkinson's disease, multiple system atrophy and controls. ***Methods:*** Twenty-six patients with Parkinson's disease, 11 patients with multiple system atrophy and 14 controls were examined in this study. Planar images were taken 15 minutes (early images) and 3 hours (late images) after intravenous injection of 111 MBq ^{123}I-MIBG. ***Results:*** MIBG uptake of the thyroid on early images decreased significantly in Parkinson's disease compared to controls ($p < 0.0001$) and multiple system atrophy ($p = 0.018$). MIBG uptake of the thyroid on early images decreased significantly also in multiple system atrophy compared to controls ($p = 0.027$). On late images, thyroid uptake differed significantly only between Parkinson's disease and controls ($p = 0.010$). ***Conclusions:*** Our study is the first to demonstrate decreased MIBG uptake of the thyroid in Parkinson's disease. Sympathetic nervous denervation of Parkinson's disease occurred not only in the heart but also in the thyroid.

Key words: Parkinson's disease, thyroid, ^{123}I-labeled metaiodobenzylguanidine (MIBG), autonomic nervous system