

Parkinson Syndrome evaluation by ¹²³I-Ioflupane SPECT scan.

We evaluate the adjunctive value of ¹²³I-ioflupane SPECT scan in assessment of doubtful Parkinson's Syndromes (PSP, MS A, PD) and for differentiation in primary degenerative disease (LBD from Alzheimer) in relation to striatal and dopamine transporter binding involvement.

Material and methods: it is one year that, after a first neurological evaluation we enrolled 66 pts (32 women and 34 men, age range 51-82 years with an average of 65 years old) affected by unclear Parkinson Syndromes, with partial clinical symptoms or doubtful degenerative primary disease (Lewy Body and Alzheimer Disease). Pts with suspect syndrome were selected for nuclear examination. All pts were treated with potassium perchlorate (400 mg per os) 30 min before tracer injection. 185 MBq of ¹²³I-ioflupane (Amersham-Health Italy) were injected intravenously. Tomographic head acquisition was performed after 3-5 hours during adequate immobilization, by the use of a rotating gammacamera (Dual-head Axis, Philips) equipped with LEUHR collimators; 40 minutes in counting time, 128x128 matrix. After reconstruction process (Butterworth filter, slice thickness 2.6 mm), a transaxial qualitative evaluation of images was performed.

Results: in all cases (100%) we were able to obtain a suitable SPECT scan and no outline occurred. The qualitative evaluation of transaxial slices showed a normal pattern of striatum in 12 cases (18 %); the scan showed in 2 cases unilateral involvement of striatum (caudate nucleus and putamen); in 6 cases bilateral and in 3 cases a single putamen involvement; 3 cases showed crossed abnormalities involving the caudate of one side and contralateral putamen and, at last, in 40 cases (75.5 % of positive cases) asymmetric bilateral involvement of both caudate and putamen.

Conclusions: SPECT ¹²³I-ioflupane scan is able to perform an highly accurate evaluation of striatal degeneration. In our series we identified the integrity of striatal structures in about 18% of cases and a striatal involvement in about 82 % of patients with early Parkinson Syndromes (PSP, MSA, PD) or partial symptoms and, at last, in almost 74% of positive cases occurred a bilateral involvement of both caudate and putamen. We also applied this evaluation in few cases on primary degenerative disease adding useful data in their diagnostic differentiation. We believe that our data consists on a still limited but useful experience that have to be extended for more relevant clinical relations.