

Cod: PO086

123I-DAT-SCAN: A PROPOSAL TO AVOID INAPPROPRIATE INVESTIGATIONS.

M. Povolato³, G. Ferretti³, M. Rensi³, E. Belgrado¹, R. Eleopra¹, O. Geatti³

¹Neurology Dept. SM Misericordia Hospital, Udine, Italy

³Nuclear Medicine Unit, SM Misericordia Hospital, Udine, Italy

BACKGROUND-AIM

Parkinson's disease (PD) diagnosis is clinical, and is based on respect of internationally coded clinical criteria and evidence of good response to L-dopa. In very early cases or atypical ones (not satisfying international criteria for PD) it is essential to exclude other kinds of parkinsonism or non-Parkinsonian tremor.

DaT SPECT is widely used to study in vivo biochemical and receptorial activity of the dopaminergic system. This tracer binds to the dopamine carrier (DAT) of the presynaptic dopaminergic terminals and in this way determines an indirect measure of neuronal loss, characteristic of the nigro-striatal parkinsonism. It's widely demonstrated that, in the initial stages of the disease, DaT has a specificity of 95% in the differential diagnosis between PD and healthy subjects, PD and iatrogenic Parkinsonism, PD and essential tremor. Wide literature data have recently issued to attribute considerable sensitivity in the differential diagnosis of Alzheimer's dementia and diffuse Levy body dementia.

However, exponential increase of demand for this examination is in conflict with the recommendations of Literature, who points out that this method should not be routinely used in clinical practice, but proposed only for complex or atypical cases.

Clinicians, instead, ask this investigation in order to exclude presynaptic dopaminergic receptor deficit in the basal ganglia, releasing by clinical criteria / diagnostic path.

For this reason it was mandatory to define a better appropriateness of clinical request and priority-access for Patient that really need to make use of information in detriment of inappropriate cases.

METHODS

Cooperation between Neurologists and Nuclear Ph has developed an access grid which matches, from June 2011 every Clinical request of DaT in Nuclear Medicine Dept. of Udine Hospital.

This grid needs the close cooperation of the Clinician among the diagnostic path in PD suspect.

Score

Age ≤ 50 ys 3

Age ≥ 51 e ≤ 70 ys 2

Age ≥ 71 e ≤ 80 ys 1

ETA' ≥ 81 aa 0

Familiarity for Parkinson or tremors 1

Cognitive decline/hallucinations 1

Non responsive Parkinsonism to L-Dopa/dopaminergics 1

NMR performed 1

No previous DaT Scan 1

Neurological examination 1

Atypical tremors 2

Just tremors 3

Previous DaT Scan - 5

Total score, unknown by the clinician, defines:

1. Appropriateness of survey

2. Waiting time for it's fulfillment: With a score between 11-13 the investigation waiting is ≤ 10 days., 9-10 ≤ 30 days., 7-8 ≤ 60 days., 5-6 ≤ 180 days. Under 5 appropriateness is not granted ≤ 360 days.

3. Patients with higher score has always precedence over others with lower score.

RESULTS

2010 vs.2013

DaT performed 196-91

Inappropriate 68 (34%)-19 (20%)

Negative scans 81 (41%)-26 (28%)

Comparing 2010 (before grid introduction) and 2013 data, we could notice as the change in patient recruitment resulted, during the whole period of 3 years in:

- Reduction of the whole number of year/scans (54%) with important cost saving
- Lower number of "negative" scans (-13%).
- Reduction of inappropriate examinations

CONCLUSION

Since we started to use the grid, after the initial incertitude of physicians and Pz, we moved to a closer collaboration with neurologists who approved the proposed grid which resulted in a significant per year reduction in the number of DaT and a lower number of negative responses with important cost saving.