

Brain single photon emission computerized tomography in pervasive developmental disorders

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Aim of the work: To detect the functional neuro-anatomical correlates of PDD in Egyptian patients through Tc-99m HMPAO-SPECT, to investigate the relationship between SPECT findings and other clinical psychometric variables, to review and test the relevance of using SPECT in assessment of PDD and to study the psychodemographic data of the parents of the PDD children.

Design of the study: cross-sectional, case control study.

Method: The study included 30 children (20 males and 10 females) who had PDD according to ICD-10 criteria and aged from 3-12 years. The control group included 13 children who were selected from apparently healthy individuals, with no history suggesting medical, neurological, or psychiatric disorders and matched with the cases regarding age, sex and socioeconomic state. All the subjects are investigated by the following tools: 1- Sociodemographic data sheet. 2- Clinical psychiatric interview. 3- The Adaptive Behavior Scale. 4- Eysenck Personality Questionnaire to the parents. 5- Wechsler Adult Intelligence Scale to the parents. 6- Brain scanning using SPECT.

Results: 96.6% of the cases show qualitative hypoperfusion in different regions of the brain, the frontal lobe is the most common region for hypoperfusion and the left side is more common than the right side. The male patients show frontal lobe hypoperfusion followed by the basal ganglia hypoperfusion, while the female patients show frontal lobe hypoperfusion followed by the cerebellum hypoperfusion. Prenatal birth complications is the only period showed significant correlation with the hypoperfusion of brain SPECT, the main regions show significant correlation with the most symptoms of PDDs are the frontal lobe and the cerebellum followed by the other regions.

Conclusion: Brain SPECT is considered to be very informative technique in studying PDD patients, where replication SPECT studies for both research, therapeutic and prognostic purposes are recommended.