

The New Approach of Nuclear Medicine Image in Diagnostic Psychiatric Diseases

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Abstract

It is known that the named mental diseases are in reality cerebral diseases and as it is, needed of exploration of this organ with image methods. The question that remains obscure is about the function of the studies organs are diminished? Or increased? Trying to answer these questions we purposed an elucidative text with some imagens obtained by nuclear medicine to avoid a new era in psychiatric diagnostic.

Keywords: Mental Diseases; Nuclear Medicine Images; Psychiatry; HMPAO; Technetium-99m

It is known that the named mental diseases are in reality cerebral diseases and as it is, needed of exploration of this organ with image methods. When the symptomatology predominant is neurologic (paralyse, dementia, stroke, etc) the option still defined by methods that express the cerebral anatomy, of the type of computed tomography (CT) or magnetic resonance (MR). These image methods express with details the organs anatomy.

The question that remains obscure is about the function of the studies organs are diminished? Or increased? Taken for example, the thyroid gland, that could be with hypo or hyperthyroidism and its anatomy still preserved. Following this thought about our brain stay the importance of study the cerebral function, in this case, start by perfusion [1,2].

All the tissues and cells need of the blood arise and of blood flow-out, as primordial condition, but a second step, the passage of the blood to the interior of the cells is other phenomenon, the called blood perfusion. This phenomenon could have distinct velocities: increase or diminish. The cellular metabolism is important regulator factor, giving the perfusion to the brain study, seen that it translates the functional state of the neurons. The detail more relevant is that a part of the neurons can be working of diminish form (hypoperfusion) or can be working of increase form (hyper perfusion) [1].

It was seen that anatomic methods (CT, MR) evaluate the anatomic structures. The nuclear medicine (NM) is the method that make tissue perfusion images through the cerebral perfusion scintigraphy (CPS) realized through the junction of a tracer and a radioactive element, in the case, HMPAO + Technetium-99m. The CPS is a simple and informative process, it will be the radiotracer (HMPAO-Tc-99m) injected venous via, in the 20mCi activity with follow exposition to the gamma-camara devices. The normal images (Figure 1) showed more fixation to occipital level, translating the visual physiological process [1].

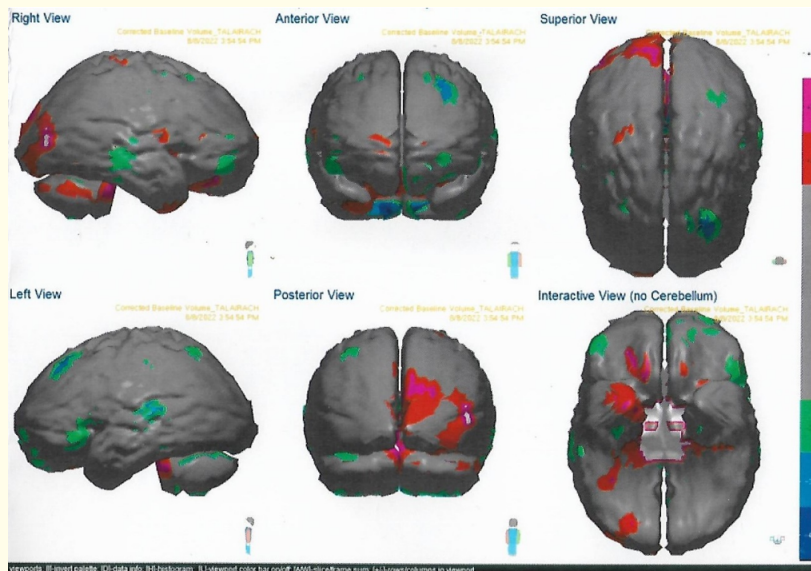


Figure 1: Showing the normal images where had more fixation to occipital level significant the visual physiological process.

Starting of the firstly that the psychiatric disease is in the human brain and that the perfusion express the cellular metabolic activity, finding diminished in the Alzheimer disease cases (Figure 2) for example.

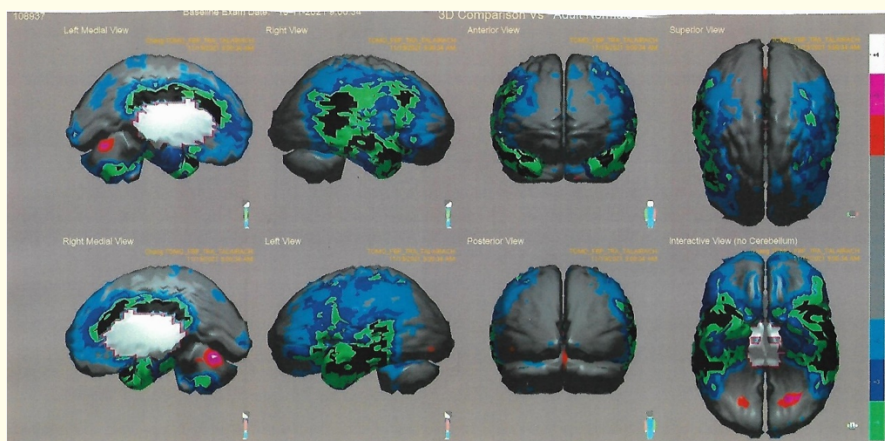


Figure 2: The perfusion founded diminished (blue colour) in the Alzheimer disease cases.

The cellular function study could be related to the perfusion phenomenon, and the NM evaluates with emphasis this process. It is crescent the notion of that the mental disease is a brain disturb, and as such its perfusion must be investigated. It is the psychiatry based in brain images [3,4].

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