

The Molecular Neuroimaging of Type 2 Narcolepsy on Tc-99m ECD Brain Perfusion SPECT as Analyzed by Easy Z-score Imaging System

Kai-Chieh Yang, BS¹, Cheng-Yu Wei, MD², Po-Chi Chan MD³, Guang-Uei Hung, MD⁴

¹ Sleep Center, Chang Bing Show Chwan Memorial Hospital, Changhua, Taiwan

² Department of Neurology, Chang Bing Show Chwan Memorial Hospital, Changhua,
Taiwan

³ Department of Neurology, Show Chwan Memorial Hospital, Changhua, Taiwan

⁴Department of Nuclear Medicine, Chang Bing Show Chwan Memorial Hospital, Changhua,
Taiwan

腦分子影像於第二型猝睡症在鎔-99m ECD 腦灌注單光子斷層之 eZIS 分析的表現

楊凱傑¹ 魏誠佑² 詹博祺³ 洪光威⁴

秀傳醫療財團法人彰濱秀傳紀念醫院睡眠中心¹

傳醫療財團法人彰濱秀傳紀念醫院神經內科²

秀傳醫療社團法人秀傳紀念醫院神經內科³

秀傳醫療財團法人彰濱秀傳紀念醫院核子醫學科³

通訊作者: 楊凱傑; 505 彰化縣鹿港鎮鹿工路六號

秀傳醫療財團法人彰濱秀傳紀念醫院睡眠中心

電話: 0921-364159; 電子郵件: mt9012@yahoo.com.tw

Abstract

Type 2 narcolepsy (T2N) is a disorder characterized by hypersomnolence, sleep paralysis or sleep-related hallucination. For patients with T2N, the pattern of hypoperfusion on brain SPECT had been controversial on previous studies. Diagnosis of T2N was fully confirmed by polysomnography and multiple sleep latency test. In this report, we demonstrated the molecular neuroimaging findings of five T2N cases with free of all drugs on Tc-99m ECD brain perfusion SPECT, which were firstly analyzed by easy z-score imaging system (eZIS) among the published literatures. eZIS is a computer-assisted statistical analysis based on the comparison with age-classified ECD normal database. eZIS provides objective and reproducible interpretation of SPECT images and has been widely utilized in Japan. On the results of eZIS analysis of SPECT, all five cases consistently showed hypoperfusion in frontal and parietal lobes and cingulate gyrus but preserved perfusion in temporal lobes, thalamus and cerebellum. The areas of hypoperfusion were also like in areas specific for Alzheimer disease (AD), including parietal lobe, precuneus, or posterior cingulate gyrus. This result suggests that SPECT examinations by eZIS analysis clearly showed obvious hypoperfusion of the limbic system in T2N.

Key words: Type 2 narcolepsy, ECD, SPECT, eZIS