

ABSTRACT

This study wants to see the effect of methadone on brain wave patterns (delta, theta, alpha, and gamma) and the rate of change from before and after consuming methadone based on amplitude values through EEG checking. The recording is done with the eyes open and eyes closed for 7 minutes for each condition. This study uses 19 channels with a 10-20 laying system. Pre-processing is done by using Finite Impulse Response (FIR) with bandpass filter impulse response (0.5-70 Hz) and Hanning windowing and noise removal by the ICA method. After that, feature extraction is performed using a Fast Fourier Transform (FFT). The results of the study showed that the patient's brain wave pattern based on the amplitude value significantly changed in effect on some methadone patients according to the recording conditions performed, namely open and closed eyes. Besides, the level of brain wave changes in 19 methadone patients differed in conditions before, after 10 minutes, 1 hour, and 3 hours of consuming methadone. This can be seen from the maximum and minimum values of each wave in a particular channel taken from the average difference between the recording before and 3 sessions after consuming methadone.

Key words: EEG, methadone, brain wave patterns