

Consistency between defined daily doses and chlorpromazine equivalents

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Abstract

The doses of antipsychotic drugs are increasingly being expressed using the defined daily dose, rather than the conventional chlorpromazine equivalent. Previous studies comparing the two units have reported conflicting results regarding their equivalence. In the present study, the correlation coefficient and coefficient of determination between the logarithms of the defined daily dose and chlorpromazine equivalent were calculated for 20 antipsychotic drugs available in Japan. Both coefficients were markedly high, at 0.957 and 0.916, respectively, confirming that there are no essential differences between the two units. Tottori J. Clin. Res. 7(2), 89-92, 2016

Key Words: antipsychotic drugs, defined daily dose, chlorpromazine equivalent

1. Introduction

To date, the doses of antipsychotic drugs have frequently been expressed using the chlorpromazine equivalent (CPZEq). The CPZEq is defined as the dose of a drug that is equivalent to 100 mg of chlorpromazine in terms of dopamine D2 receptor affinity, clinical effects, and other properties¹⁾. In general, a CPZEq of approximately 600 mg is regarded as the optimal dose^{2,3,4)}. However, evidence for the use of the CPZEq is unclear, and standards for the CPZEq vary among research papers. Regulations concerning regular reviews of the CPZEq have yet to be established.

In 1981, the WHO Regional Office for Europe recommended the ATC/defined daily dose (DDD) system for international drug utilization studies⁵⁾. The DDD refers to the standard daily dose of a drug for maintenance treatment. It is defined based on data from a large number of research papers, and is reviewed every 5 years. The DDD values for new drugs are defined after a 3-year grace period, and subsequently reviewed every 5 years.

The CPZEq and DDD are expressed in mg. However, the prescribed daily dose (PDD) can be compared with the DDD through expression as the PDD/DDD.

Rijcken et al.⁶⁾ emphasized differences between the DDD and CPZEq, while other studies

highlighted similarities between them. In the current study, the author compared the two units using their logarithms, to determine potential similarities or differences between them, and confirmed them to be essentially identical.

2. Methods

Among the 30 types of antipsychotic drugs available in Japan, the DDD values of 20 were recorded and clarified based on the ATC-DDD. Their CPZEq values were calculated using a chlorpromazine conversion table reported by Inagaki et al.⁷⁾.

Subsequently, the correlation coefficient and coefficient of determination between the DDD values and the dose equivalent to 100 mg of the CPZEq (100mg CPZEq) values were calculated. Furthermore, the correlation coefficient and coefficient of determination between the logarithms of the DDD values and the logarithms of the 100mg CPZEq values were calculated.

3. Results

Table 1 shows the DDD and CPZEq of each drug. The mean CPZEq value obtained when the DDD values of the 20 drugs were converted into CPZEq values was 369.3 mg. Table 2 shows the correlation coefficient and coefficient of determina-