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Predicting and managing adverse reactions of psychotropic drugs

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Abstract

Background: Neuroleptic induced extrapyramidal disorders are often presented in a form of orofacial hyperkinesias and dystonia. Rational use of neuroleptic drugs requires individualised approach to a patient, however simple criteria for determining individual, 'personalised' dosage regimen have not been fully developed for routine practice in resource-limited hospital settings. Objective: To study the tonus of tongue muscles as a measure of orofacial dystonia and the total hepatic oxidative capacity as a potential predictor of excessive vulnerability to neuroleptic-induced dystonia in psychiatric patients. Methods: We measured the maximal force of the tongue manoeuvre (F, g/cm 2), the total (integral) hepatic oxidative capacity by the antipyrine-test and used chlorpromazine equivalent to calculate the total daily neuroleptic load in 283 psychiatric patients and 30 healthy volunteers. Results: The tonus of tongue muscles depends on the total daily neuroleptic dose and the length of antipsychotic treatment. The higher the total daily neuroleptic dose and the longer the treatment history, the greater the tongue muscles' tonus is. The tongue muscles' tonus was greater in patients with low rate of oxidative antipyrine metabolism. Antidepressants contributed to the increased tonus of the tongue muscles in 'slow metabolisers' of antipyrine. Conclusions: The simple and cheap measurements of total hepatic oxidative capacity and of muscle tonus of the tongue could be used to predict and manage neuroleptic-induced adverse reactions.

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Keywords

antidepressants, drug metabolism, hepatic oxidative capacity, movement disorders, Neuroleptics, tongue muscle tonus