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SCIENTIFIC LETTER TO THE EDITOR

Domperidone Disaster: Need for a Single Formulation?

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To the Editor: A 3-mo-old infant with loose motions and persistent vomiting was prescribed syrup domperidone telephonically in the dose of 0.5 mg/kg/dose [a dose of 2.5 ml= 2.5 mg of domperidone]. Since domperidone drops had been newly launched, the chemist, after inquiring whether it was a small baby, gave the parent a bottle of domperidone drops in place of the syrup. The parents administered the dose recommended for the syrup formulation twice in the space of 4 h. This resulted in a huge dose being administered to the infant [25 mg of domperidone 2 times in 4 h, a total dose of 50 mg or more than 10 mg/kg in 4 h.

Several hours later the child developed intense irritability, excessive crying, intermittent opisthotonus with upward deviation of the eyes [a classic oculogyric crises] and dystonic cycling movements of the upper and lower limbs. Systemic examination was unremarkable except for persistent tachycardia [in the range of 200–240 per min]. Specific investigations revealed a serum prolactin level of 45.9 ng/ml [normal level up to 30], a serum potassium of 6.2 mEq/ml [normal up to 5.3] and an ECG which revealed SVT.

The child was administered intravenous promethazine along with supportive therapy. It took almost 36 h for the symptoms and the SVT to abate completely.

Domperidone has an excellent safety profile. It is considered safer than metoclopramide and prochlorperazine. Due to its unique structure, domperidone has very limited penetration of the blood brain barrier. The central: peripheral ratio for domperidone is approximately 1:300, compared with 1:45 for metoclopramide. However, in the pediatric age group, due to the higher permeability of the blood brain barrier there is a higher incidence of adverse reactions [1, 2].

Domperidone might seem to be an attractive, safer alternative to cisapride, a drug that was recently withdrawn due to drug-related proarrhythmic events. However studies have reported QT prolongation, life-threatening ventricular tachyarrhythmias and even cardiac arrests after the use of domperidone [3, 4]. Our child suffered from SVT due to domperidone.

The availability of various pediatric formulations with varying concentrations of a drug often leading to administration of wrong doses [paracetamol drops 120 mg/ml, paracetamol syrup 125 mg/5 ml, 250 mg/5 ml] [5].

Parents and chemists consider drops to be milder than syrups, which leads to very high doses being administered to the child resulting in drug toxicity. A single pediatric concentration for all age groups would reduce such errors.

Also recommended is informing doctors about new drug concentrations to be launched by the pharmaceutical companies and ensuring the presence of a qualified pharmacist at the counter to monitor the medicines sold at the pharmacy. The case also demonstrates the hazards of telephonic advice.

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