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CYP2D6 phenotyping with dextromethorphan

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Abstract:
Genetically determined individual differences in the ability to oxidize certain drugs have raised recently a considerable interest because of clinical importance of this problem. Determination of CYP2D6 oxidation phenotype is used to obtain more efficient pharmacotherapy and to explain lower efficacy of some drugs and presentation of adverse effects in particular patients.
The aim of this study was to identify the CYP2D6 oxidation phenotype with dextromethorphan (DM) as a probe drug. The study included 85 healthy volunteers of Polish origin. DM (40 mg) was given orally to healthy adults and 10-h urine samples were collected. DM and the metabolite dextrorphan (DX) were analyzed by the HPLC method. Phenotyping was performed using the metabolic ratio (MR) calculated as the urinary DM/DX output.
Based on the metabolic ratio, we can distinguish extensive (EM) and poor (PM) metabolizers in human population. Individuals with a dextromethorphan MR greater than 0.3 ($\log > -0.5$) were classified as PMs.
In our study, the frequency of the PM phenotype was 9.4%, which is in the range found in other Caucasian populations (3–10%).

Key words:
dextromethorphan, CYP2D6, phenotyping