



Short communication

Omeprazole does not change the oral bioavailability or pharmacokinetics of vinpocetine in rats

Tomasz Sozański¹, Jan Magdalan¹, Małgorzata Trocha¹, Antoni Szumny², Anna Merwid-Ląd¹, Wojciech Słupski¹, Marta Karażniewicz-Łada³, Grzegorz Kiełbowicz², Dorota Książczyńska¹, Adam Szela¹

¹Department of Pharmacology, Wrocław Medical University, Mikulicza-Radeckiego 2, PL 50-345 Wrocław, Poland

²Department of Chemistry, Wrocław University of Environmental and Life Science, C.K. Norwida 25, PL 50-375 Wrocław, Poland

³Department of Physical Pharmacy and Pharmacokinetics, Poznań University of Medical Sciences, Świącickiego 6, PL 60-781 Poznań, Poland

Correspondence: Tomasz Sozański, e-mail: tsoz@wp.pl

Abstract:

Previous studies proved that food strongly enhanced the bioavailability of vinpocetine. Food may change the pharmacokinetics of a drug by affecting various factors, including gastrointestinal pH. However, the influence of proton pump inhibitor-induced pH alterations on vinpocetine pharmacokinetics is not known.

The aim was to evaluate the influence of omeprazole on the pharmacokinetics of oral vinpocetine.

One group of male Wistar rats received single oral doses of vinpocetine (2 mg/kg – regimen V). In the second group, omeprazole (10 mg/kg) was administered intraperitoneally for 5 days before vinpocetine administration (regimen OV). For analysis of vinpocetine pharmacokinetics, blood samples were obtained before and 0.25, 0.5, 1, 1.5, 2, 3, 4, 5, 6, 8, 10 and 12 h after vinpocetine administration. Vinpocetine concentrations were measured by high performance liquid chromatography (HPLC).

The mean values of AUC_{0-t} , AUC_{0-inf} and C_{max} in regimen V were very similar to respective values in regimen OV. The mean T_{max} in both regimens was estimated for 1.5 h. There were no statistically significant differences between both regimens. In conclusion, omeprazole did not affect the pharmacokinetic profile of vinpocetine.

Key words:

vinpocetine, omeprazole, oral bioavailability, rats
