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Resumo	This study investigated the effects of a single dose of desvenlafaxine via oral administration on the pharmacokinetic parameters and clinical and laboratory characteristics in healthy volunteers using a pharmacometabolomics approach. In order to optimize desvenlafaxine's therapeutic use and minimize potential adverse effects, this knowledge is essential. Methods: Thirty-five healthy volunteers were enrolled after a health trial and received a single dose of desvenlafaxine (Pristiq®, 100 mg). First, liquid chromatography coupled to tandem mass spectrometry was used to determine the main pharmacokinetic parameters. Next, ultra-performance liquid chromatography–quadrupole time-of-flight mass spectrometry was used to identify plasma metabolites with different relative abundances in the metabolome at pre-dose and when the desvenlafaxine peak plasma concentration was reached (pre-dose vs. post-dose). Results: Correlations were observed between metabolomic profiles, such as tyrosine, sphingosine 1-phosphate, and pharmacokinetic parameters, as well as acetoacetic acid and uridine diphosphate glucose associated with clinical characteristics. Our findings suggest that desvenlafaxine may have a broader effect than previously thought by acting on the proteins responsible for the transport of various molecules at the cellular level, such as the solute carrier SLC and adenosine triphosphate synthase binding cassette ABC transporters. Both of these molecules have been associated with PK parameters and adverse events in our study. **Conclusions:** This altered transporter activity may be related to the reported side effects of desvenlafaxine, such as changes in blood pressure and liver function. This finding may be part of the explanation as to why people respond differently to the drug.
Fomento	CNPq e CAPES