Herb-Drug Interactions in the Treatment of HIV/AIDS: The Importance of Cultural Competence

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Introduction
• In 2017, there were approximately 26 million people living with HIV/AIDS in Africa. • Herbal medicines are frequently used in Africa as a primary treatment for HIV/AIDS. • Research on TASHAK, an herbal medicine used in Tanzania, began in 2004. • Due to the wider availability of antiretroviral medication (ARVs), the possibility of co-administration is very likely.

Objective of the Study
To determine whether there are herb-drug interactions that involve TASHAK and its herbal components.

Methods
• Cytochrome P450 inhibition assays were carried out by fluorescence spectroscopy, which tracked fluorescence-yielding substrates for CYP1A2, CYP2C9, CYP2C19, and CYP3A4. • By means of high-performance liquid chromatography (HPLC), the production of Bufuralol’s metabolite—1'-hydroxy Bufuralol—was used to determine herbal inhibition of CYP2D6.

Results

Discussion
• TASHAK displayed an inductive effect on the CYP1A2 enzyme and an inhibitory effect on the CYP2C9, CYP2C19, CYP3A4 and CYP2D6 enzymes. The constituent herbal components displayed varying effects. • The screening assays carried out do not consider the numerous biological pathways TASHAK undergoes before interacting with cytochrome P450 enzymes in a live subject.

Conclusion
The administration of TASHAK in the presence of a drug relying on the enzymes CYP2C9, CYP2C19, CYP3A4 and CYP2D6 may potentially have decreased clearance. Drugs metabolized by CYP1A2 may have increased metabolism and more rapid clearance if co-administered with TASHAK.

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References