w3R1

by M M

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Response to Hade Dabbagh

Hello Hade, thanks for sharing such an informative presentation to this week's discussion post questions on the CYP1A2 enzyme. Your presentation was easy and engaging and helped me learn about the CYP1A2 enzyme. CYP1A2 enzyme works by breaking down substances into smaller molecules that the body can easily eliminate. Dysfunction or alterations in the activity of CYP1A2 can lead to significant changes in the metabolism of these substances, potentially affecting their efficacy or toxicity. Genetic variations in the CYP1A2 gene can also influence an individual's susceptibility to certain diseases or their response to specific medications. However, it is significant that the individual's genetic predisposition impacts the enzyme activity's effectiveness. Guo et al. (2021) asserted that the CYP1A2 enzyme metabolizes numerous clinical medications, including mycotoxins, nitrosamines, aflatoxins, and substances such as steroids.

It was surprising to learn that polycyclic aromatic hydrocarbon ingestion smoking increases the activity of this enzyme while most medications, including verapamil, fluvoxamine, and oral contraceptives, inhibit the activity of this enzyme (Guo et al., 2021). While investigating the restrictions linked to CYP1A2 enzyme, I noted that medications can be co-prescribed and result in increased plasma concentrations and, consequently adverse effects. Specifically, research by Chaugai et al. (2019) noted that prescribing medications such as tizanidine alongside medications such as fluvoxamine that inhibit CYP1A2 enzyme can result in an increase in plasma concentrations of tizanidine and increase the risk of side effects. One of the significant lessons I learned about the CYP1A2 enzyme is the need to adjust the frequency or dosage of prescriptions for individuals who are fast metabolizers of the CYP1A2 enzyme, as it enhances the attainment of desired therapeutic outcomes.

References

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