Cannabinoids: General Uses and Interactions

Diane Hobbs, PharmD Candidate 2022
Purdue University College of Pharmacy

National Community Oncology Dispensing Association, Inc.
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Background

- There has been a lot of recent interest in the use of cannabinoids by patients with cancer.
- There are currently two cannabinoid products FDA approved for cancer patients, one with orphan drug status, and one currently in Phase III clinical trials in the US.

Objectives

- The purpose of the study was to identify current uses of cannabinoid medications and possible interactions with chemotherapies.

Study Design

- Data has been collected from a primary literature and drug database search.
- Primary Outcome Measure
  - -To identify uses of cannabinoid medications and the potential interactions between cannabinoid drugs and major drug transporters and metabolizing enzymes of chemotherapeutic agents.

Methods

Data Collection:

•Uses and classes of cannabinoid products were obtained through a PubMed literature search and Micromedex

•Interactions with drug transporters and metabolic pathways were obtained by a PubMed literature search

Data Analysis

- Cannabinoid medications were tabulated based on indication.
- Interactions with common chemotherapeutic were tabulated based on inhibition of important Cytochrome P450 enzymes and drug transporter proteins.

Figure 1

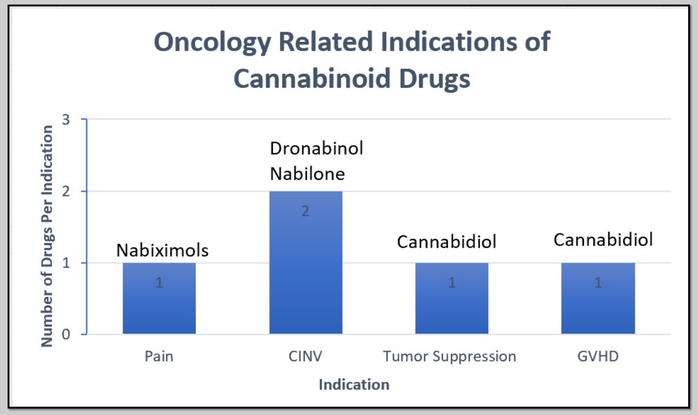

Figure 3

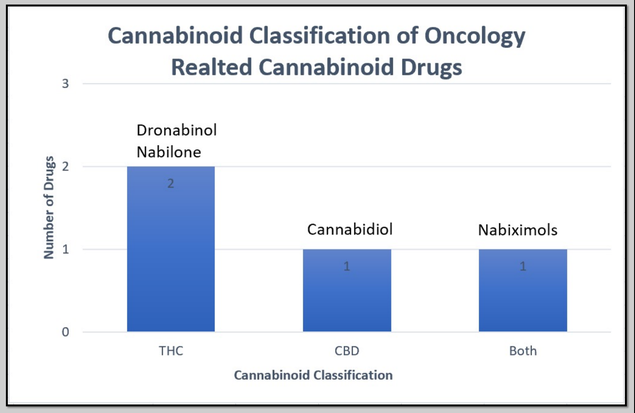

Figure 2

Major Drug Transporters and Metabolic Pathways of Chemotherapies Inhibited by Cannabinoids

	P-gp	BCRP	CYP2C9	CYP3A4	CYP2D6
THC					
CBD					
CBN					

*Dark Blue: inhibitor; Light Blue: potential inhibitor; White: not significant

Discussion

- Figure 1 shows the number of FDA regulated cannabinoid drugs per oncology related indication.
- Figure 2 shows the inhibition of major transporters and CYP enzymes involved in the ADME of chemotherapy drugs.
- Figure 3 shows the cannabinoid classifications of FDA regulated oncology associated cannabinoid drugs.

Conclusion

- Limitations of this study include interactions between cannabinoid drugs and chemotherapeutic agents have not been proven in clinical trials. These interactions can only be speculated.
- There is the possibility of interactions between cannabinoids and chemotherapy. These interactions could cause chemotherapy toxicity or cause a poor response to a chemotherapy depending on if the chemotherapy is a prodrug. Providers should use professional judgement to determine if the cannabinoid product is necessary.

References

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