Cannabis in Cancer: How effective are cannabinoids in controlling Chemotherapy Induced Nausea and Vomiting compared to standard antiemetics?

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Types of CINV

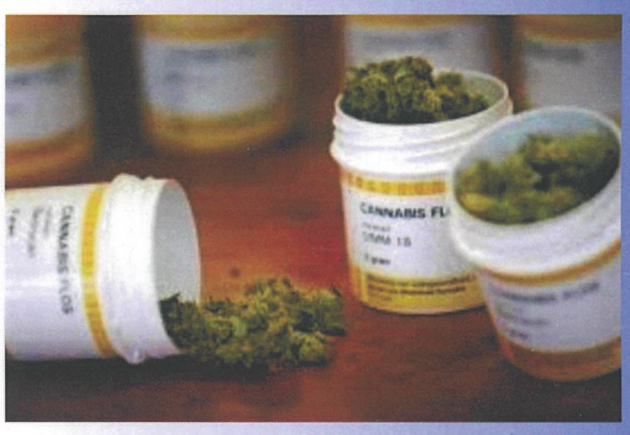
Type	*Description*
Acute	Within minutes to several hours of chemotherapy: Ends within 24hrs.
Delayed	More than 24hr after chemotherapy: lasts several days
Anticipatory	Triggered by anything the patient associates with nausea and vomiting related to previous chemotherapy treatment such as smell or taste.
Breakthrough	Occurs even when preventative measures have been taken. (Slatkin, 2007)

Clinical Issue

- ⇒ 70 percent of patients having chemotherapy will experience Chemotherapy Induced Nausea and Vomiting (CINV) (Ware, Daeninck & Maida, 2008)
- ⇒ CINV is the number one side effect that is most stressful for cancer patients (Ware, Daeninck & Maida, 2008).
- ⇒ 30 percent of patients consider discontinuing treatment because of it CINV (Ware, Daeninck & Maida, 2008).
- ⇒ CINV can negatively impact a patient's quality of life and can lead to comorbidities (Slatkin, 2007).
- ⇒ The challenges of lack of control of CINV have prompted new research and investigations into the possible effectiveness of cannabinoids(Slatkin, 2007).
- ⇒ Cannabinoids compounds are synthesized by a plant called cannabis sativa and also by synthetically created molecules (Carroll et al., 2001).

Literature Review

- ⇒ Despite advances in antiemetics these medications have decreased efficacy in preventing nausea, delayed CINV and breakthrough CINV which remain the two most stressful types of CINV for cancer patients (Slatkin, 2007).
- ⇒ Cannabinoids act at multiple central control points for nausea and vomiting indicating that cannabinoids have an important role in the reduction of these symptoms.(Slatkin, 2007)
- ⇒ Sedation, somnolence, a "high" sensation and euphoria were seen as potentially beneficial side effects during chemotherapy (Carroll, et al., 2001)
- ⇒ One study reviewed patients preferences of three oral synthetic cannabinoids compared to antiemetics during chemotherapy treatment. Their research indicated that patients preferred and believed that cannabinoids were more effective at controlling CINV compared to conventional antiemetics (Carrol et al., 2001).



Conclusion & Implications for Practice

Cannabinoids may not be superior to antiemetics alone, but when they are combined they have been shown to be more superior compared to each alone (Cotter, 2009). By targeting various systems involved in the inhibition of nausea and vomiting patients will achieve better control of CINV (Cotter, 2009). As cancer is becoming more prevalent in New Zealand it is important for nurses working with patients with cancer experiencing CINV to be aware how this may affect their health and wellbeing. If oral synthetic cannabinoids became available in New Zealand nurses should provide up to date, appropriate information and education to the patient.

References:

Carroll, D., Campbell, F., McQuay H., Moore, A., Reynolds, J., & Tramèr, M. (2001). Cannabinoids for control of chemotherapy induced nausea and vomiting: quantative systematic review. *British Medical Journal, 323* (7303), 1-8.

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Ware, M., Daeninck, P., & Maida, V. (2008). A review of nabilone in the treatment of chemotherapy-induced nausea and vomiting. *Journal of Therapeutics and Clinical Risk Management, 4*(1), 99-107.

Cotter, J. (2009). Efficacy of crude marijuana and synthetic Delta-9-Tetrahydrocannabinol as treatment for chemotherapy-induced nausea and vomiting: a systematic literature review. *Oncology Nursing Forum, 36*(3), 345-352.

PECOT category	Information relating to question	Explanation
Population	People over the age of 16 with any type of cancer receiving chemotherapy. Irrespective of gender, race or chemotherapy scheme.	An age limit of 16 years was selected because participants need to consent and understand the drug given and possible side effects. Gender, race and chemotherapy scheme was kept open as this may have limited finding studies.
Exposure (intervention)	Cancer patients who used cannabinoids (synthetic or smoked) as pharmacological intervention for the management of chemotherapy induced nausea and vomiting	I will be looking for articles that used an experimental design in which cannabinoids were compared to standard antiemetics in the treatment of CINV
Comparison / Control	Cancer patients who used standard antiemetics as a pharmacological intervention for the management of chemotherapy induced nausea and vomiting	Same as above.
Outcome	Complete control or significant decrease in nausea and vomiting during any point of chemotherapy scheme (e.g during chemotherapy cycle and between chemotherapy cycles)	There are many types of CINV (anticipatory, acute, delayed, breakthrough and refractory) therefore it important to look for articles that focused on control of CINV during any point of chemotherapy treatment.
Time	Time frame of each participant's chemotherapy scheme.	Different Chemotherapy agents have different time frames. Therefore there is no specific time frame identified.

(Schneider, Whitehead, LoBiondo-Wood, & Haber, 2013)

By using the PECOT model to acquire a formal searchable question this literature review will aim to critically explore and understand the question "How effective are cannabinoids in controlling chemotherapy induced nausea and vomiting compared to standard antiemetics".