8. Summary of key evidence and gaps in current evidence-base

del Giglio, A., Soares, H.P., Caparroz. C., & Castro PC. (2000). Granisetron is equivalent to ondansetron for prophylaxis of chemotherapy-induced nausea and vomiting: Results of a meta-analysis of randomized controlled trials. *Cancer, 89,* 2301–2308.

Evidence:

- Both ondansetron and granisetron have similar antiemetic efficacy for prophylaxis of chemotherapy-induced nausea and vomiting.

Gaps:

- Only the first chemotherapy cycle was considered in studies with a crossover design.
- Data on the efficacy of granisetron and ondansetron for acute nausea and vomiting are lacking over multiple chemotherapy cycles.
- The study of delayed nausea and vomiting was limited.
- The instruments for measuring nausea and vomiting were not mentioned.
- Further randomized control trials are needed to confirm the effectiveness of granisetron and ondansetron for delayed nausea and vomiting.

Devine, E.C. & Westlake, S.K. (1995). The effects of psychoeducational care provided to adults with cancer: Meta-analysis of 116 studies. *Oncology Nursing Forum, 22,* 1369–1381.

Primary Authors: A nurse was the primary author in 34% of the studies.

Evidence:

- The effect of psychoeducational care (interventions) on nausea was greater where subjects had documented nausea, vomiting, and anxiety.
- The effects of psychoeducational care on nausea were larger in later chemotherapy cycles (e.g., fourth or fifth)
- Psychoeducational care has a beneficial effect on nausea and vomiting.
- The magnitude of this effect on nausea varies somewhat across chemotherapy cycles.

Gaps:

- Nausea and vomiting were measured in a variety of ways.
- Many instruments did not have reported reliability and validity.
- Researcher-created questionnaires were common.
- The terms nausea, vomiting, and retching are often used synonymously.
- Few potential moderators of treatment effectiveness were reported consistently.
- Most studies used systematic desensitization and muscle relaxation with guided imagery or meditation

- The concomitant relationship of other symptoms to nausea, vomiting, and retching is unknown.

Ioannidis, J.P.A., Hesketh, P.J., & Lau, J. (2000). Contribution of dexamethasone to control of chemotherapy-induced nausea and vomiting: A meta-analysis of randomized evidence. *Journal of Clinical Oncology, 18,* 3409–3422.

Evidence:

- Dexamethasone is effective in protecting from emesis both in the acute and delayed phases (emesis avoided in one of six patients treated).

Gaps:

- No studies were found that gave corticosteroids only for the delayed-phase coverage.
- Confusion of terminology in the manuscript is noted regarding *delayed emesis defined as vomiting or retching* occurring more than 24 hours after chemotherapy and up to 5 to 8 days.
- "*More emphasis on vomiting because it is more objective to determine, but data on nausea control were also collected, as well as data on control of both nausea and vomiting, wherever available."*
- *Dexamethasone is effective in protecting from emesis both in the acute and delayed phases, with emesis* avoided in one patient out of six treated.
- Instruments for measuring nausea, vomiting, and retching are not mentioned.
- Not all patients were chemotherapy naïve.
- Information about alcohol consumption was not standardized across trials to allow meaningful interpretation.
- Some patients were pre-selected on the basis of poor or partial anti-emetic response during the first cycle.
- Subjects in most studies were not stratified to type of neoplastic disease.

Morrow, G.R. (1992). Methodology and assessment in clinical anti-emetic research: A meta analysis of outcome parameters. *British Journal of Cancer, 19*(Suppl.), S38–41.

Evidence:

- The major clinical advances in the control of chemotherapy-induced nausea and vomiting have largely occurred through the study of antiemetic agents.
- The development of psychometrically sound research tools and rigorous methodology has improved the management of chemotherapy-induced nausea and vomiting.

- The effect of an antiemetic regimen was found to be dependent on how the outcome was quantified and independent of the type of outcome measured.
- The application of findings from well designed studies can contribute to the overall success of antiemetic

Gaps:

- Retching is not mentioned as a separate symptom.

Pan, C.X., Morrison, R.S., Ness, J., Fugh-Berman, A., & Leipzig. R.M. (2000). Complementary and alternative medicine in the management of pain, dyspnea, and nausea and vomiting near the end of life: A systematic review. *Journal of Pain and Symptom Management, 20*, 374–387.

Primary Authors: physicians

Evidence:

- There are data to support the use of some complementary and alternative medicine modalities in terminally ill patients.

Gaps:

- Large-scale trials in terminally ill patients with nausea and vomiting that is not associated with chemotherapy are needed.
- Controlled trials for complementary and alternative medicine modalities in the treatment of nausea, vomiting, retching in hospice patients are unavailable.

Sloan, J.A., Goldberg, R.M., Sargent, D.J., Vargas-Chanes, D., Nair, S. Cha, S.S., Novotny, P.J., Poon, M.A., O'Connell, M.J., & Loprinzi, C.L. (2002). Women experience greater toxicity with fluorouracil-based chemotherapy for colorectal cancer. *Journal of-Clinical Oncology, 20,* 1491–1498.

Evidence:

- Provides data for the existence of a sex-dependent toxicity difference.
- Confirmed an earlier finding that women receiving 5-fluouracil chemotherapy in a five-day bolus schedule experience toxicity across cycles more frequently and with more severity than men.

Gap:

- Physician rated end points for each toxicity type and all side effects including nausea, a subjective symptom.

Smith, M.C., Holcombe, J.K., & Stullenbarger, E. (1994). A meta-analysis of Intervention effectiveness for symptom management in oncology nursing research. *Oncology Nursing Forum, 21,* 1201–1210.

Primary Author: One author may be a registered nurse.

Evidence:

- Improvement was observed in nausea and vomiting relief for seven of the nine interventions reported.
- Individual study effects for relief of nausea and vomiting revealed low to moderate effects on improvement range
- The relaxation group of studies showed a low average effect (d = 0.17), with no significance and no improvement.

Gaps:

- Demographic data were not consistently reported.
- Limited attention was given to healthcare (treatment) costs.
- Lack of valid and reliable instruments for studying patients with cancer was noted.
- Insufficient numbers of studies on a symptom or with a particular intervention restrict appropriateness for practice recommendations.
- Wide variation of developmental age and interventions for nausea and vomiting were noted in the nine studies reviewed.
- A theory base in oncology nursing research was lacking.

Tramer, M. R, Carroll, D., Campbell, F.A,, Reynolds, D.J, Moore, R.A., & McQuay, H.J. (2003). Cannabinoids for control of chemotherapy induced nausea and vomiting:Quantitative systematic review. *BMJ, 323(7303),* 16–21.

Evidence:

- In selected patients, cannabinoids may be useful as mood-enhancing adjuvants for controlling chemotherapy-related sickness.
- Across all trials, cannabinoids were more effective than active comparators and placebo.
- At the end of 18 crossover trials, between 38% and 90% of the patients *preferred* cannabinoids.
- Side effects happened significantly more often with cannabinoids.

Gaps:

There were no comparisons of cannabinoids with a serotonin (5-HT3 receptor antagonist).