

## Cancer Undergoing Chemotherapy for uterine cancer

David Casey\*

Department of Obstetrics and Gynecology, The Ohio State University Comprehensive Cancer Center, Ohio, USA

### SHORT COMMUNICATION

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#### Corresponding Author:

David Casey

Department of Obstetrics and Gynecology,

The Ohio State University Comprehensive Cancer Center

Ohio, USA

davidcasey@gmail.com

### ABSTRACT

A greater risk of venous thromboembolism is linked to gynecologic malignancies (VTE). A reliable technique for determining the risk of VTE in cancer patients is the Khorana score. The goal of this study is to evaluate whether patients with uterine cancer receiving chemotherapy can use the Khorana score as a risk stratification tool for VTE.

Patients with newly diagnosed uterine cancer who had chemotherapy over a 4-year period were included in a retrospective cohort analysis. The patients were divided into groups according to their Khorana scores and whether they received adjuvant, neoadjuvant, or final chemotherapy.

There were 276 patients in all, of whom 40 underwent adjuvant chemotherapy and 236 neoadjuvant or final treatment. The majority of patients (64.5 per cent) had advanced-stage illness. Within 180 days, 18 (6.5 per cent) individuals experienced VTE

#### Key Words

Chemotherapy, Endometrial cancer, Thromboprophylaxis, Uterine cancer, Venous thromboembolism

#### Introduction

To evaluate and contrast the performance of various exercise modalities in lowering cancer-related fatigue (CRF) in cancer patients undergoing chemotherapy. Moreover, activity intensities for various exercise modalities were contrasted.

A standardised approach was used to obtain study characteristics. The PEDro scale was used to evaluate the methodological quality, while the Revised Cochrane Risk of Bias Tool for Randomized Trials was used to evaluate the risk of bias. Based on the grading of recommendations, assessment, development, and evaluation, the veracity of the evidence was determined. The adjusted standardised mean difference (SMD), also known as Hedge's *g*, and the related 95per cent confidence intervals were utilised as the measure of effect (CI).

The Khorana score, which takes into account the disease site, body mass index (BMI), and pre-chemotherapy blood counts (platelets, haemoglobin, and WBC), is a clinically proven method for determining the risk of VTE in ambulatory cancer patients. For more than ten years, clinical trials and practise guidelines have employed the Khorana risk assessment model to decide which patients should get primary VTE. The 2019 American Society of Clinical Oncology (ASCO) Clinical Practice Guidelines amended their advice to advise giving pharmacologic thromboprophylaxis to patients receiving systemic chemotherapy if their Khorana score is less than two. It should be emphasised, however, that according to the initial derivation and validation studies, the Khorana score threshold of 2 is regarded as moderate risk.

The authors of those trials came to the conclusion that patients in this middle category would not likely benefit from thromboprophylaxis. Uterine cancer patients were included in the study, however they were combined with other gynaecologic cancers and made up a relatively minor proportion of the study population. Due to the prevalence of surgical treatment and the minority of patients undergoing chemotherapy, the majority of data available addressing VTE in women with uterine cancer are concentrated on the perioperative setting. Nonetheless, it is generally known that women with uterine cancer in an advanced stage who need chemotherapy have the highest risk of developing VTE, and the effectiveness of primary thromboprophylaxis in this group of patients is understudied. The Khorana score should be able to identify patients who are most at risk for VTE, according to our theory.

Cancer-related fatigue (CRF) is a severe, enduring, and subjective feeling of physical, emotional, and/or cognitive depletion that is connected to having cancer or receiving cancer therapy. In contrast to the exhaustion felt by the healthy population, this fatigue is thought to be more intense, out of proportion to the effort, and unsatisfactorily eased by rest. It is out of proportion to recent events and impairs daily functioning<sup>1</sup>. Cancer patients describe it as a lingering sense of tiredness<sup>2</sup>. In addition to other things, CRF frequently comes with pain, sleeplessness, or despair. A single institution retrospective cohort study was carried out after Institutional Review Board (IRB) approval. Between January 2016 and January 2020, The Ohio State Wexner Medical Center tested every patient with newly diagnosed uterine cancer who received treatment there. One of the most common negative side effects of chemotherapy for cancer patients is weariness<sup>3</sup>. As opposed to 31 per cent of individuals who are not taking chemotherapy, almost 70 per cent of colorectal cancer patients who are undergoing adjuvant chemotherapy report having CRF. Even when the treatment is over, this disparity still exists. 45 per cent of patients receiving active treatment for breast, colorectal, prostate, or lung cancer and 29 per cent of survivors have moderate to severe CRF.

Patients have strong opinions about chemotherapy and are wary of it. Around 95 per cent of cancer patients who are scheduled to receive chemotherapy or radiotherapy anticipate having CRF. They anticipate more severe side effects than individuals who will receive radiation, such as CRF, nausea, or hair loss.

After evaluating the NA/DCT and ACT subgroups as well as the entire chemotherapy cohort, a high Khorana score (defined with a threshold at either 2 or 3) was not able to substantially predict VTE ( $p > 0.05$ ) (the study was not powered to evaluate the subgroups). Except for the neoadjuvant group, where the cutoff was, a high Khorana score was related with a non-statistically significant higher odds ratio of VTE. As anticipated, increasing the Khorana score cutoff for the high-risk group decreased the sensitivity of the risk assessment while increasing the specificity for predicting VTE. In all models, the Khorana score's negative predictive value was more than 80 per cent, while its positive predictive value was rather low<sup>4</sup>.

CRF is undertreated despite being one of the most prevalent post-treatment problems; just around 40 per cent of these individuals received care for CRF. Exercise, psychosocial strategies, and pharmaceutical therapies are all advised by the American Society of Clinical Oncology's guideline for evaluating and treating cancer patients. The American Society of Clinical Oncology advises patients to maintain a moderate level of physical activity, which should include

both strength training and cardio exercises including walking, cycling, and swimming (eg, lifting weights). It has been demonstrated that every intervention enhances the CRF. With weighted effect sizes and 95 per cent confidence intervals (CI) of 0.30 (0.25; 0.36), 0.27, exercise modalities offer a slightly greater improvement, followed by psychological interventions and the combination of exercise and psychological interventions (0.21; 0.33).

In this cohort of patients with uterine cancer, the Khorana score was found to be non-statistically significant in the prediction of chemotherapy-associated VTE. Both the original Khorana model's definition of a high-risk Khorana score threshold of 3 and the ASCO guidelines' suggested threshold of 2 were unable to accurately predict VTE and had poor accuracy based on AUC. This held true when neoadjuvant/definitive and adjuvant chemotherapy were applied to the cohort (although the study was not powered for subgroups). The majority of patients (69 per cent) with a Khorana score of 2 had a high negative predictive value (94 per cent) but a poor positive predictive value (7 per cent) as was to be expected. The negative predictive value (94 per cent) and the positive predictive value remained constant when we increased the threshold. We cannot provide the patient with a specific answer as to what kind of exercise would be most advantageous for them in addition to their chemotherapy, despite the guidelines demonstrating that exercise has positive results on CRF during oncology treatment. As a result, the objective of this systematic review and network meta-analysis was to examine how well various exercise regimens reduced CRF in cancer patients receiving chemotherapy. The Preferred Reporting Items for Systematic Reviews integrating Network Meta-Analysis (PRISMA-NMA) extended statement was followed when conducting this systematic review and network meta-analysis. Prior to beginning the evaluation, the study's protocol was registered in a global registry<sup>5</sup>.

## Conclusion

QCRI programme was used to export the recognised references, remove duplicates, and carry out the screening process in two stages. Using data from the study title, abstract, and keywords, we evaluated the studies' relevance in connection to the study questions and objectives in the first phase. When there was no agreement or enough data, the entire text was examined. The whole text of each paper was evaluated for conformity with the inclusion criteria in the second step. Two separate researchers (A.H.G. and C.V.R.) independently selected the articles, and disagreements were settled by a consensus process mediated by a third researcher.

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