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Title: Cardiovascular Risks in Women with Endometrial Cancer

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Introduction:

Endometrial cancer (also known as uterine cancer) is the most common gynaecological cancer in New Zealand. Fortunately when detected in its early stages it has a good prognosis. The basis of this project stems from recent literature which has found that overall women are actually more likely to die from cardiovascular disease (CVD) than endometrial cancer itself. This is reflective of the high probability of curative cancer treatment along with high prevalence of cardiovascular disease in the New Zealand (NZ) population. Additionally endometrial cancer is associated with factors (e.g. obesity, dyslipidaemia, diabetes) that also increase the risk of developing CVD.

Current follow up of these patients is not only aimed at detecting recurrence of cancer but also to provide guidance on improving their overall wellbeing. With rising numbers of endometrial cancer survivors there is a need to assess whether this groups increased risk of death from CVD is being addressed during follow up.

Aim:

This project aims to document known risk factors for cardiovascular morbidity in women undergoing follow up for low risk endometrial cancer. In addition we will document whether appropriate medical interventions (e.g. Treatment of hypertension) are being undertaken during follow up to reduce cardiovascular risk.

Method:

Data concerning cardiovascular risk factors was collected from electronic and hard copy clinical records in a cohort of 100 patients undergoing follow up for low risk endometrial cancer. Analysis was restricted to patients with grade 1 or 2, stage Ia or Ib endometrial cancer. These patients were identified from an existing CDHB database and were consecutively included into the study from November 2009 through to December 2014.

Data was collected from the time of diagnosis. The patient's cardiovascular risk score was then calculated using the NZ cardiovascular risk chart. Other relevant factors not required to calculate cardiovascular risk (e.g. Body mass index [BMI], cardiovascular medication use) were also collected. Furthermore, we also documented any recorded medical interventions aimed to reduce cardiovascular risk during follow up.

Results:

The mean age at diagnosis is 61 with 70% of women aged 55 years and older. The prevalence of diabetes was 14%, higher than the diagnosed diabetic prevalence of 5.8% in NZ. Women who smoked made up only 9% of the cohort, below the general population at 17.6%. Known hypertension prevalence was 46%, with over 90% of these women already being treated with anti-hypertensive medication(s). This is significantly greater than 15.9% of NZ adults who report being on medication for hypertension.

BP measurements revealed 19 patients with systolic BP >140mmHg who were not reported to have hypertension or be on anti-hypertensive medication. Two of the 19 had a systolic BP >170mmHg, indicating a need to start medication irrespective of their cardiovascular risk score.

Data to calculate BMI was available in 83 patients. Mean BMI was 35 (obese category). Two thirds of the women (66%) had a BMI ≥ 30 , with nearly a third (29%) having a BMI in the morbidly obese category of

≥40. Despite obesity levels being on the rise, these results are well above the NZ population with obesity rates (BMI ≥30) at 30%. Interestingly those aged <45 years had a higher mean BMI than those in the age bracket 45-54 (43.3 vs. 33.5).

Cardiovascular risk scores could only be calculated in 69 patients. The remaining patients could not have their score calculated primarily due to lack of data on cholesterol levels. The median cardiovascular risk score was 10-15% or moderate 5 year CVD risk. This median score remained at 10-15% across NZ Europeans, NZ Maori and Pacific Islanders. There was a notable increase in scores from 45-54 year to 55-64 year age group, rising two risk categories from mild (2.5-5%) to moderate risk (10-15%).

For those with cardiovascular risk scores >20%, there is strong evidence of benefit from BP lowering, statin and anticoagulant therapy. 19 patients scored >20%, 12 of whom had a cardiovascular comorbidity. Most were already on anti-hypertensives (13 patients, 68%), close to half (8 patients, 42%) were on anticoagulant (aspirin and/or warfarin) therapy and 37% (7 patients) were on a statin. Three patients were not on any cardiovascular medications.

Throughout follow up, some women with particularly low cancer recurrence risk are eligible to become a part of a Survivorship Programme. The focuses of the programme are on healthy lifestyle modifications, management of problem symptoms and support. Half of the cohort is part of this initiative. Over 80% of those in the programme have discussed or been advised about their weight with eight dietitian referrals being offered. In total 28 dietitian referrals were offered to all patients (programme or non-programme). Documented green prescription referrals were offered to 16 programme patients. These were almost only solely offered to those as part of the Survivorship programme with only one non-programme patient receiving a referral. Smoking cessation has become routine part of medical care with advice given to seven of the nine smoker patients.

16% of the cohort already had CVD at the time of endometrial cancer diagnosis. During follow up there were seven cardiac related admissions to Christchurch Public Hospital with another three patients then being diagnosed with CVD. This indicates that CVD is already beginning to manifest itself within four years of follow up.

Conclusion:

We have found that women with low risk endometrial cancer have a moderate (10-15%) 5 year risk of developing CVD. Lack of cholesterol levels was the primary reason we were unable to calculate a patient's risk score. This could potentially become a factor included as a part of routine follow-up, because knowing the CVD risk influences which lifestyle changes and medications should be implemented.

Other key findings included the high prevalence of hypertension, both known and unknown (systolic BP measurement ≥140mmHg). While BMI is not required in calculating 5 year cardiovascular risk using the NZ chart, it is a significant contributor to CVD. Prevalence of obesity is more than twice that of the general population, not only affecting cardiovascular risk, but putting the patient at increased risk during surgical treatment of the endometrial cancer. Reflective of these high obesity levels is the number of weight related interventions; over one in four of women were offered dietitian referrals and one in six offered a green prescription.

From this data, areas for future focus include:

- Adequate hypertension management
- Conducting cholesterol level measurements
- Reducing elevated BMIs
- Assessing whether BP and lipid lowering, along with antiplatelet therapy are required