EDITORIAL

Improving outcomes in gynaecological cancer: the benefits of subspecialisation

Jo Morrison

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Over the past 30 years advances in medicine have resulted in increasingly complex care pathways and individualisation of care. As a result, medicine has become subspecialised in many areas, and there is evidence for improved outcomes for patients treated by multidisciplinary teams, as demonstrated in chronic heart failure,[1] stroke,[2] and colorectal cancer.[3]

The 1995 Calman-Hine report, which aimed to improve cancer survival in the UK, recommended setting up co-ordinated care within cancer networks;[4] patients with less common and rare cancers should have care centralised, with patients referred from units to a centre, which could devote a specialist multidisciplinary team to the care of a particular tumour site.

Gynaecological malignancy, arising from the ovary, cervix, endometrium, vulva or vagina, affects 2.2% of the female population by the age of 65 and is the second most common cause of cancer death in women, following breast cancer.[5] In the developed world, most gynaecological cancers are endometrial or ovarian, whereas cervical cancer is more common in the developing world and is the leading cause of gynaecological cancer death worldwide. However, compared with colorectal and breast cancer, gynaecological cancer is relatively uncommon.

Treatment for gynaecological cancers is frequently multimodal, requiring co-ordination of surgical care with chemotherapy and radiotherapy. For some time there has been indirect evidence that women have more favourable outcomes if they are treated by specialist gynaecological oncologists in cancer centres. Gynaecological cancers were one of the first cancer sites to have centralisation of care recommended following the Calman-Hine report, as detailed in the *Improving Outcomes in Gynaecological Cancer* report in 1999.[6] Furthermore, gynaecological oncology has become a subspecialty within obstetrics and gynaecology in many countries, with the development of specific advanced training programmes to meet the technical challenges of gynaecological cancer surgery and to understand the role of surgery within a multidisciplinary team.

A Cochrane Review by Yin Ling Woo and colleagues, published in the March 2012 issue of *The Cochrane Library*, evaluates the effect of centralisation of care for women with gynaecological malignancy.[7] Outcomes for women with gynaecological cancer treated by specialist gynaecological oncologists within centres were compared with those receiving care in non-specialist general hospitals. The review identified five studies, including 62,987 women with gynaecological cancer, and concluded that women with gynaecological cancer may have improved outcomes if treated in specialist centres. The findings were stronger for women with ovarian cancer than for the other gynaecological cancers, as several of the studies examined ovarian cancer only. A meta-analysis of data from three of the studies (including over 9000 women) demonstrated that women with ovarian cancer who received care in hospitals with a gynaecological oncologist on site had improved survival compared with those treated in non-specialist hospitals; hazard ratio (HR) of death was 0.90 (95% confidence interval (CI) 0.82 to 0.99).

The review authors noted that all the included studies were from high-income countries (USA, Canada, UK, and the Netherlands), so the findings may not be transferable to other healthcare settings. The review was also limited by the poor quality of the evidence: all included studies were retrospective observational studies and therefore at high risk of bias. However, the studies demonstrated consistent results, which gives some weight to the findings. Another limitation was that only one study, albeit of 48,981 women, included women with gynaecological cancer other than ovarian, and the authors suggested that further studies, ideally from other healthcare settings, should be performed to confirm the benefits of centralising care for women with other gynaecological cancers. The authors thought that the likelihood of selective reporting bias was low, as all studies included overall survival data. However, none of the studies looked at risk of harms or quality of life data, which would be important to women and those commissioning healthcare services.

Gynaecological cancer is another disease for which specialisation seems to improve survival outcomes for patients. Why should this be? Seeking reasons for the benefit of subspecialised care was beyond the scope of the Cochrane Review, but one can speculate on factors that may play a role. Gynaecological cancer surgery can be challenging, involving techniques not routinely encountered by generalists. Even in early-stage ovarian cancer, surgery by a specialist gynaecological oncologist is an important prognostic indicator.[8] For advanced ovarian cancer, several studies have demonstrated that women operated on by a subspecialty trained gynaecological oncologist are more likely to be optimally debulked than women operated on by a general gynaecologist. Interestingly, one study demonstrated that centralisation resulted in a two-fold increase in optimal debulking rates for women with

stage III-IV ovarian cancer, but there was no significant change in survival, suggesting that survival in advanced ovarian cancer is influenced primarily by factors other than surgical expertise.[9]

In vulval cancer, a condition for which optimal surgery has a major influence on survival, access to subspecialist surgery due to implementation of Calman-Hine guidelines has improved lymphadenectomy rates and survival.[10] So surgical skill clearly has an effect, and access to appropriately trained multidisciplinary care is important, as demonstrated by Woo and co-authors.[7] Another factor may be that women who are very unwell, with advanced disease and poor performance status, may not be fit for transfer to a specialist centre, although some studies have demonstrated that women treated at specialist centres have more advanced disease.[11]

The authors concluded that it would be important for future studies to have a more robust prospective design, although recognised that a randomised controlled trial may be difficult, but that prospective studies should be performed, with adequate funding and agreed protocols, to evaluate the impact of instigating centralisation of care in the future. Certainly any future studies should ideally examine other gynaecological cancers and outcomes, such as risk of adverse outcomes, quality of life, and cost-benefit analyses, in addition to survival, to inform future healthcare commissioning.

The evidence in gynaecological cancer treatment is consistent in demonstrating benefits from centralisation and is in line with evidence from other diseases (and mirroring results from a new Cochrane Review of colorectal cancer surgery[12]), thus supporting the role of cancer networks and the need for co-ordination of care. These improvements need to be safeguarded in these difficult economic times, and co-operative working between centres and units needs to be protected from the effects of competition, for the benefit of our patients.

Author Information

Jo Morrison[1]

[1]Department of Obstetrics and Gynaecology, Musgrove Park Hospital, Taunton, UK

Declarations of interest

The author has completed the Unified Competing Interest form at www.icmje.org/coi_disclosure.pdf (available upon request) and declares:(1) no receipt of payment or support in kind for any aspect of the article; (2) payment as co-ordinating editor of the Cochrane Gynaecological Cancer Group, as part of normal salary, via a grant from the UK National Institute of Health Research, but no other financial relationships with any entities that have an interest related to the submitted work; (3) that she is employed as a consultant gynaecological oncologist in a cancer centre, but has no other financial relationships with entities that have an interest in the content of the article; and (4) no other relationships or activities that could be perceived as having influenced, or giving the appearance of potentially influencing, what was written in the submitted work.

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