Short Term Ovarian Cancer Mortality

NCIN Data Briefing

KEY MESSAGE:

- *For women with ovarian cancer, mortality is high in the first two months after diagnosis.*
- *Mortality is particularly high among elderly patients and those diagnosed via an emergency presentation route.*
- *Women with combinations of these major risk factors have even higher mortality.*

Introduction

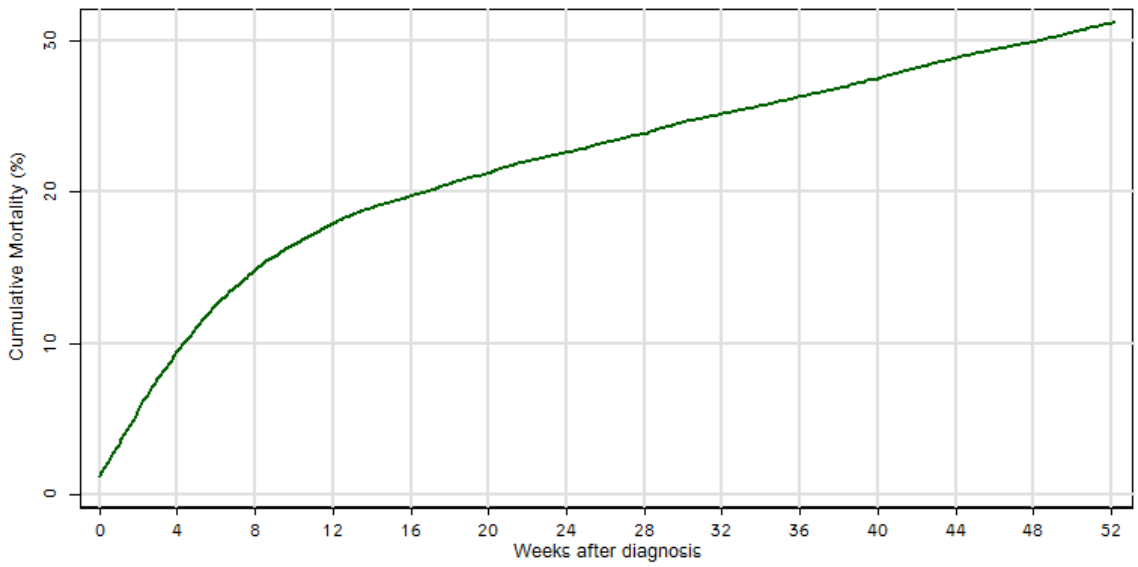
Despite significant improvements over the last decade[1], ovarian cancer survival in England lags behind comparable countries[2], highlighted by results from the International Cancer Benchmarking Partnership (ICBP)[3]. The ICBP identified that the UK had particularly high mortality in the first few weeks following diagnosis, but did not have an unfavourable stage distribution[4].

To better understand mortality in the first year after diagnosis in England, mortality among ovarian cancer patients was investigated by various potential risk factors: tumour stage; tumour sub-type; treatment; route to diagnosis[5]; age at diagnosis; patient comorbidity; geographical region; and socio-economic deprivation. This data briefing summarizes the main results of descriptive analyses which aimed to identify possible reasons for England's high short-term mortality.

Mortality in the First Year

Between 2006 and 2008, 16,943 women were diagnosed as having ovarian cancer. Of these, 31% (5,288 women) died in the first year with almost half (2,592 women) of these deaths occurring in the first two months after diagnosis (figure 1).

Figure 1: Cumulative mortality (%) among women with ovarian cancer in the first year after diagnosis, England 2006-2008



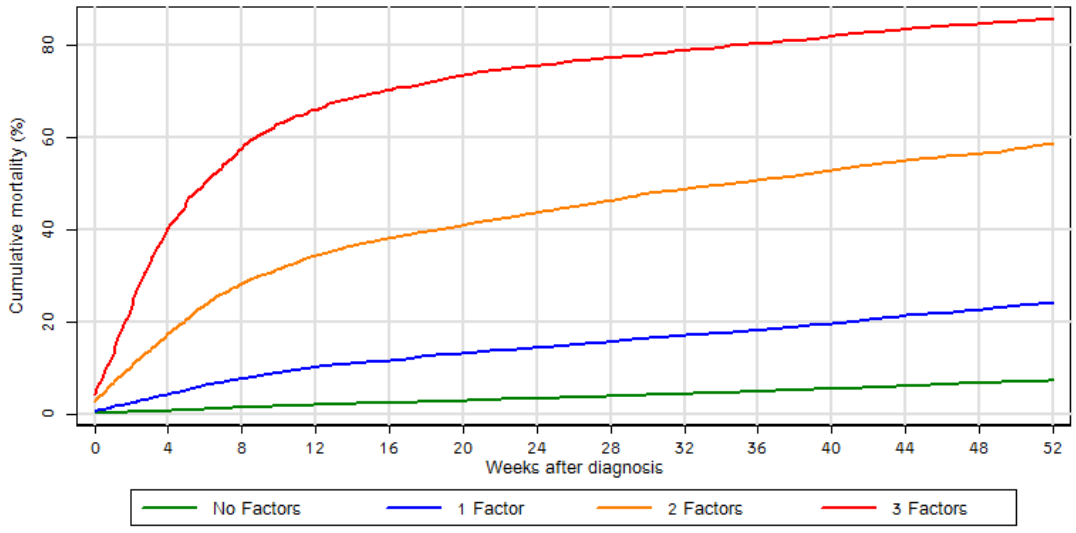
Major Risk Factors

There are 3 main risk factors for high mortality in the first year after diagnosis among women with ovarian cancer:

- **Route to diagnosis.** Of the 5,042 women diagnosed via an emergency presentation route[*], 56% (2,827) died in the first year.
- **Advanced age.** Of the 3,773 women diagnosed between the ages of 70 and 79 years, 43% (1,604) died in the first year, and of the 2,762 women diagnosed over the age of 80 years, 70% (1,946) died in the first year.
- **Tumour morphology (sub-type).** Of the 5,023 women with 'unclassified epithelial'[†] morphology, 60% (3,028) died in the first year, and of the 845 women with 'miscellaneous[‡] and unspecified[§]' morphology, 71% (599) died in the first year. This may be explained by factors relating to the disease presentation, such as patient performance status, rather than differences in underlying diagnosis; the procedures required to identify more accurate morphologies may not have been appropriate for these women.

Women with combinations of these three risk factors were more likely to die in the first year after diagnosis than women with no risk factor or with only one risk factor (figure 2 and table 1).

Figure 2: Cumulative mortality (%) among women with ovarian cancer in the first year after their diagnosis by the number of major risk factors, England 2006-2008



Stage is unlikely to be a major risk factor for short-term mortality as the majority of ovarian cancer patients are diagnosed with stage 3 or 4 disease. Furthermore, patients who die shortly after diagnosis are unlikely to have been fully surgically staged, as there may not have been time for staging investigations, or such investigations may have been unsuitable. Performance status at the time of diagnosis is likely to be a more important prognostic factor than underlying stage.

The proportion of patients with 'unclassified epithelial' or 'miscellaneous and unspecified' morphology (37%) is high. It is possible that some of the patients with these nonspecific

[*] *Emergency presentation* - first diagnosis via an emergency route including: A&E; emergency GP referral; emergency transfer; emergency consultant outpatient referral; emergency admission or attendance[5].
[†] *Unclassified* - not classified according to WHO classification for the specific anatomical site.
[‡] *Miscellaneous* - other miscellaneous tumour types including sarcomas.
[§] *Unspecified* - malignant but unknown histogenesis.

morphologies do not have primary ovarian cancer, but instead metastatic disease from, for example, colorectal cancer which has been misdiagnosed as primary ovarian cancer.

Table 1: Mortality (%) over the first 2 months after diagnosis and between 2 months and 1 year after diagnosis among women diagnosed with ovarian cancer, England 2006-2008

Major Risk Factors	Diagnosed (n)	First 2 Months		2 Months to 1 Year	
		Deaths (n)	Mort. (%)	Deaths (n)	Mort (%)
None	6,573	93	1.4	383	5.8
Aged 70+ Years (*Age*)	2,319	164	7.1	367	15.8
Emergency Presentation (*Emergency*)	1,458	90	6.2	189	13.0
Unclassified/Unspecified Morphology (*Morph*)	1,426	159	11.2	289	20.3
Age & *Emergency*	725	180	24.8	195	26.9
Age & *Morph*	1,583	486	30.7	520	32.8
Emergency & *Morph*	951	287	30.2	248	26.1
Age & *Emergency* & *Morph*	1,908	1133	59.4	505	26.5

Next Steps

The descriptive analyses strongly support initiatives to reduce the proportion of patients diagnosed via an emergency presentation route, particularly among the elderly.

It is difficult to draw further conclusions as the three main risk factors identified here may well be associated with several other factors which affect mortality, such as patient co-morbidity or treatment. The Public Health England East Midlands Knowledge and Intelligence Team is performing more in depth analyses to account for the case-mix effect of potential risk factors, including treatment, as well as to identify and explain possible regional variations. These are planned to be published in 2013/14.

References

[1] Overview of Ovarian Cancer in England: Incidence, Mortality and Survival (November 2012)
Trent Cancer Registry, http://www.ncin.org.uk/view.aspx?rid=1740

[2] Survival for Ovarian Cancer in Europe: The across-country variation did not shrink in the past decade.
Oberaigner, W; Minicozzi, P; Bielska-Lasota, M; et al. *Acta Oncologica*. 2012. Vol. 51 (4), pp. 441-453

[3] Cancer survival in Australia, Canada, Denmark, Norway, Sweden, and the UK, 1995-2007 (the International Cancer Benchmarking Partnership): an analysis of population-based cancer registry data.
Coleman, MP; Forman, D; Bryant, H; et al. *The Lancet*. 2011. Vol. 377 (9760), pp. 127-138.

[4] Stage at diagnosis and ovarian cancer survival: evidence from the International Cancer Benchmarking Partnership.
Maringe, C; Walters S; Butler J; et al. *Gynaecol. Oncol*. 2012. Vol. 127 (1), pp. 75-82

[5] Routes to Diagnosis 2006-2008.
NCIN, http://www.ncin.org.uk/publications/routes_to_diagnosis.aspx

FIND OUT MORE:

The PHE East Midlands Knowledge and Intelligence Team is the NCIN lead for gynaecological cancers in Public Health England
http://www.empho.org.uk/tcr/gynaelead.aspx

Other useful resources within the NCIN partnership:

Cancer Research UK CancerStats – Key facts and detailed statistics for health professionals
http://info.cancerresearchuk.org/cancerstats/

The National Cancer Intelligence Network (NCIN) is a UK-wide partnership operated by Public Health England. The NCIN coordinates and develops analysis and intelligence to drive improvements in prevention, standards of cancer care and clinical outcomes for cancer patients.