

Why are patients with primary ovarian cancer not receiving standard treatment?

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1. INTRODUCTION/AIMS:

- Ovarian cancer is one of the deadliest gynaecological malignancies¹, with stage III and IV disease having a 5-year survival rate of 26.9% and 13.4% respectively². Standard treatment involves a combination of surgery and chemotherapy, however not all patients receive this care¹. In England, 21.9% of new diagnoses receive no anti-cancer treatment at all³.
- Work exploring the decisions that lead to a lack of therapeutic intervention within this group is limited. Understanding why this cohort of 'no treatment' patients exists is the first step in reducing the number of women who fall into this group.
- This study aims to understand why some women with primary ovarian cancer do not receive any standard treatment. The cohort is examined for any trends and factors that may predict management outcomes are identified.

2. METHOD:

- A retrospective study of all ovarian cancer patients referred to St Mary's Hospital from Manchester University NHS Foundation Trust, Tameside and Glossop Integrated Care NHS Foundation Trust and Pennine Care NHS Foundation trust (2013-2020), who received no standard treatment.
- Recurrent or secondary ovarian cancer, those who received hormonal or palliative treatment and patients with stage I disease were excluded, leaving 53 patients in total.

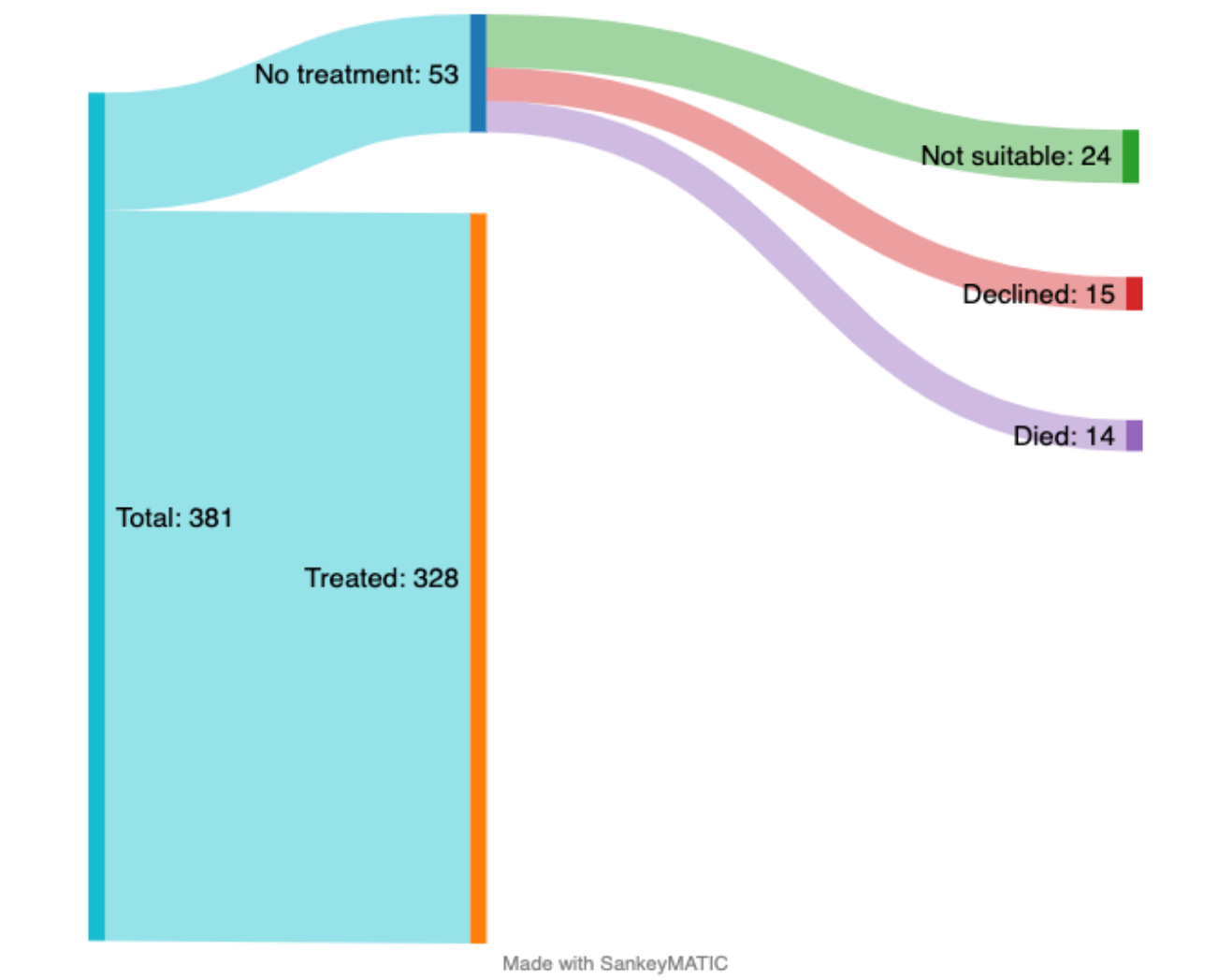


Figure 1: Sankey diagram outlining the proportion of patients with advanced ovarian cancer who did not receive treatment along with the reason why.

- The 3 core reasons for no treatment were; patient not suitable for treatment, patient declined treatment, patient died before treatment could commence.
- A one-way ANOVA or chi squared test was used to analyse specific characteristics alongside the reasons for no treatment.

3. RESULTS:

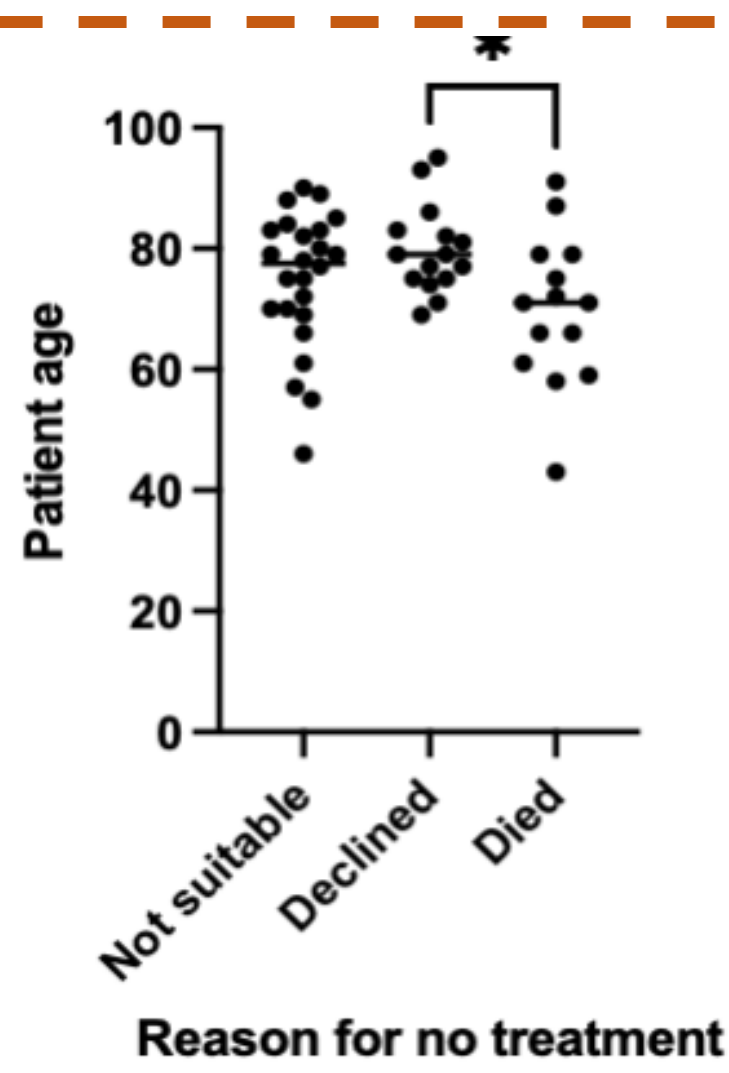


Figure 2: The distribution of age between each 'reason for no treatment' category. A one-way ANOVA test and a multiple comparisons analysis showed a significant difference in the age distribution between patients who declined treatment and those who died before treatment, with those dying before treatment being younger on average, ($p < 0.05$).

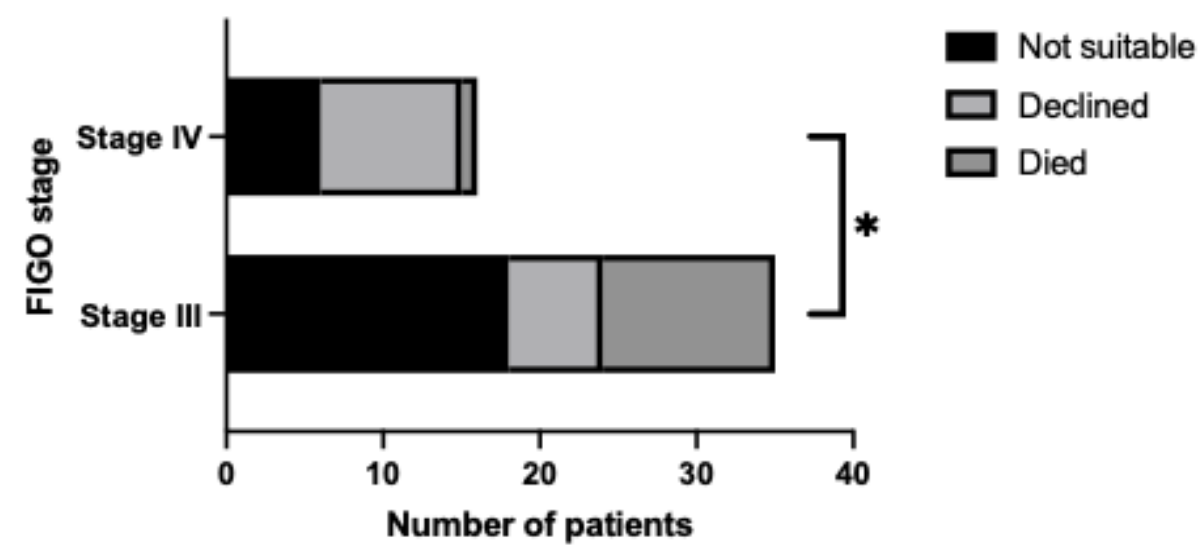


Figure 3: the influence of FIGO stage on patients with ovarian cancer not receiving treatment. A chi squared test was used. Patients with stage IV are more likely to decline treatment than stage III patients, and those with stage III disease are more likely to be unsuitable for treatment or die before treatment, ($p < 0.05$).

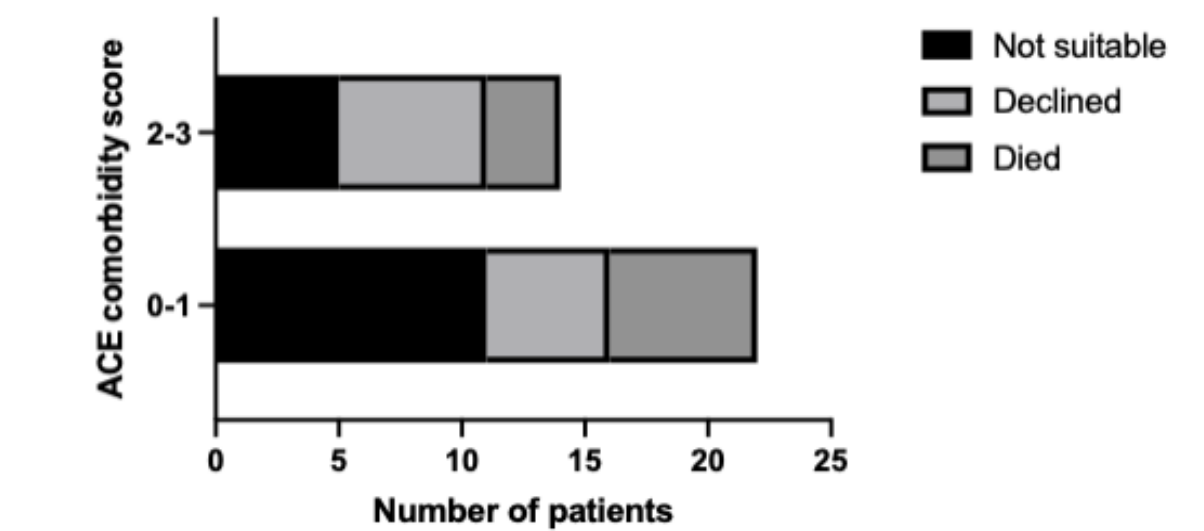


Figure 4: the influence of ACE comorbidity score on ovarian cancer patients not receiving treatment. More patients with a score of 2-3 declined treatment, and those with a score of 0-1 are more likely to be unsuitable for treatment, however a chi squared test found this to be not statistically significant.

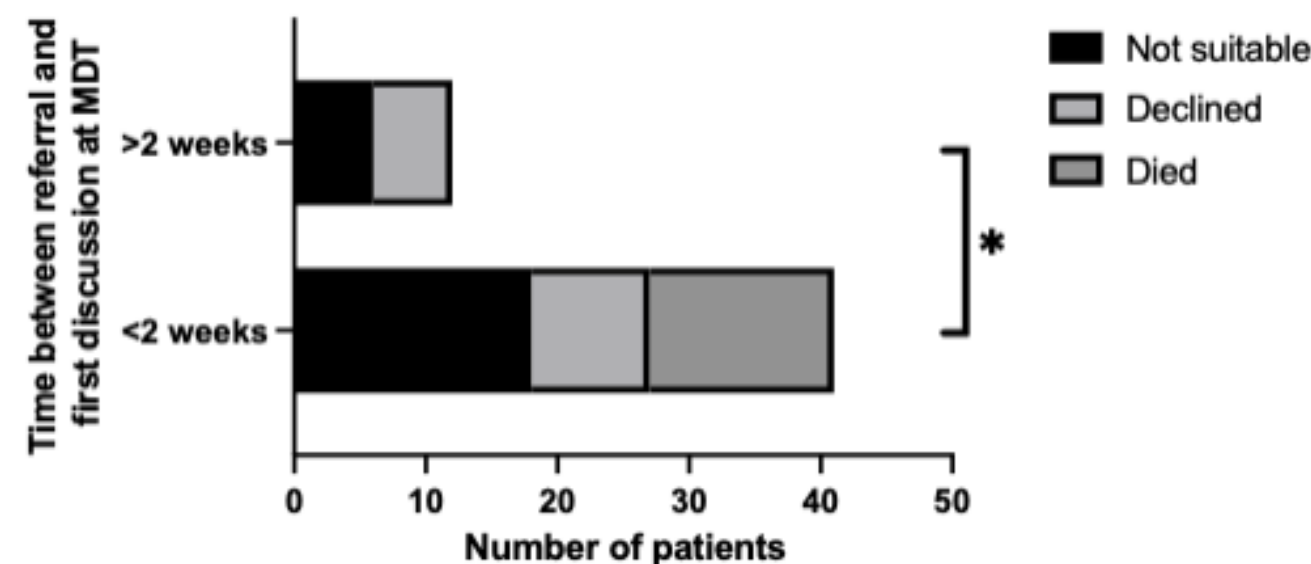


Figure 5: the influence of time between referral and first discussion at MDT on the reason why ovarian cancer patients do not receive treatment. Patients who are not discussed within 2 weeks are more likely to decline treatment than those who are discussed within 2 weeks, ($p < 0.05$).

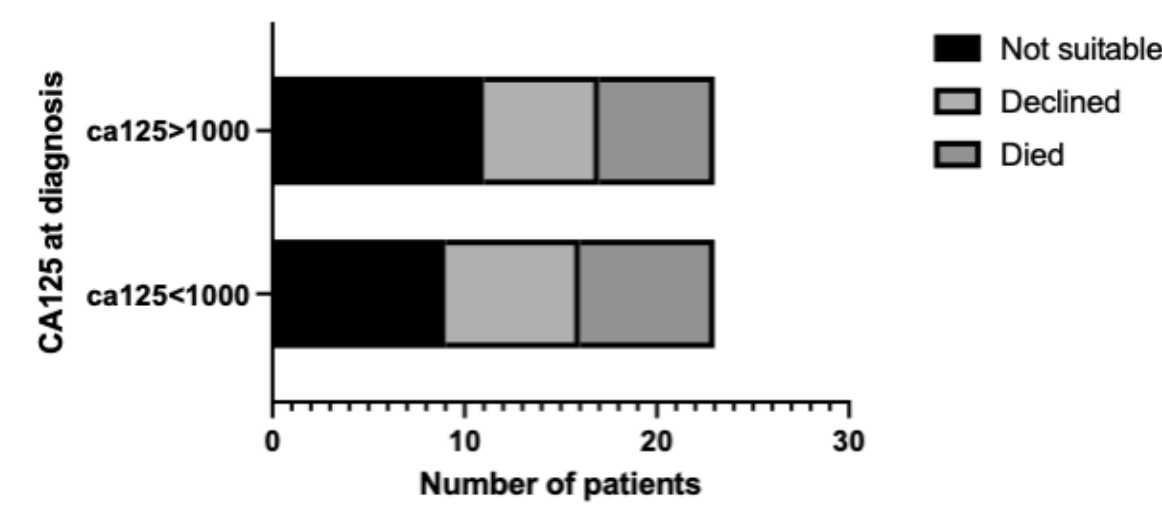


Figure 6: the influence of CA125 level at diagnosis on patients with ovarian cancer not receiving treatment. The proportion of women in each 'reason for no treatment' category stays the same, regardless of whether the CA125 level is above or below 1000 U/ml.

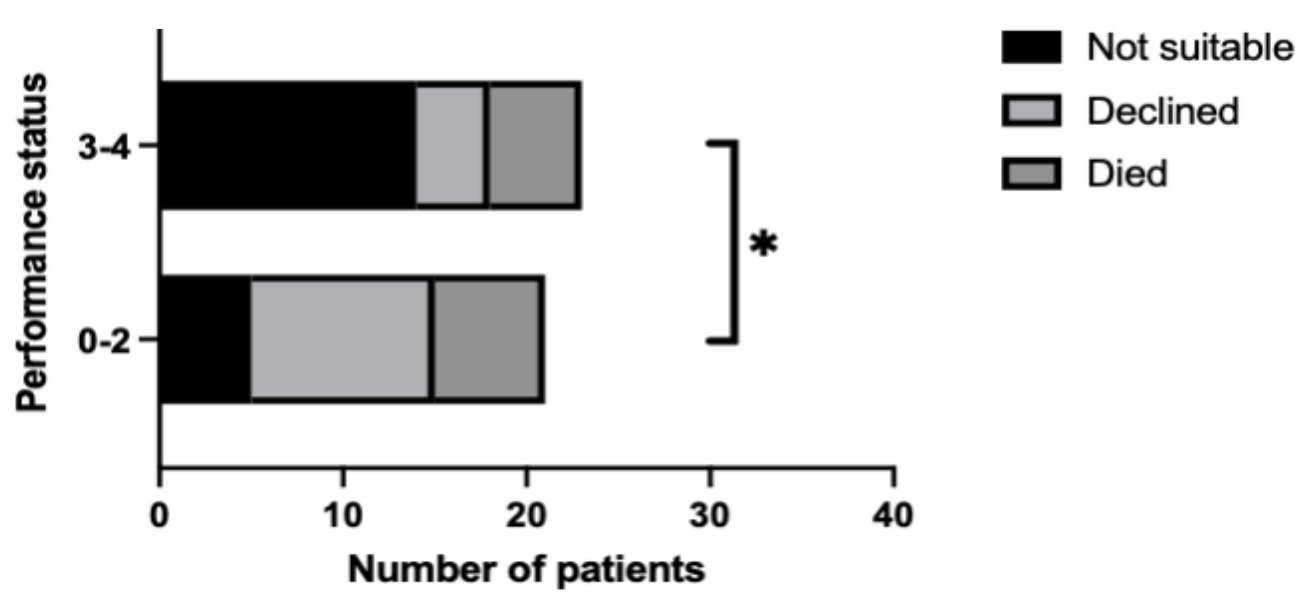


Figure 7: the influence of performance status on patients with ovarian cancer receiving treatment. A chi squared test was applied to the data and found that a performance status of 3-4 is associated with patients not being suitable for treatment, and that patients are more likely to decline treatment if they have a performance status of 0-2, ($p < 0.05$).

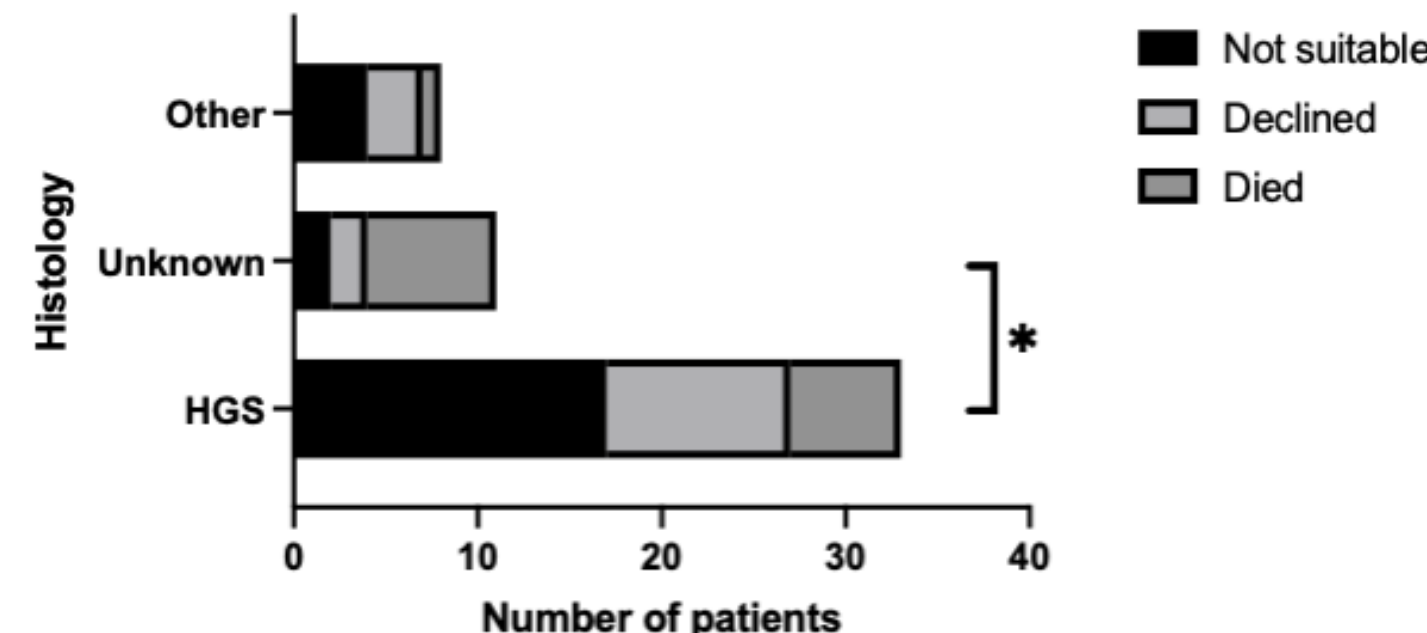


Figure 8: the influence of histology on patients with ovarian cancer not receiving treatment. The histological subtypes were high grade serous (HGS), unknown, or other (low grade serous, clear cell, endometrioid, carcinosarcoma, squamous cell carcinoma). A chi squared test found that patients with HGS ovarian cancer are more likely to be unsuitable for treatment and patients with unknown histology are more likely to die before treatment, ($p < 0.05$).

4. CONCLUSION

- On average, patients who died before treatment were younger than those who declined treatment. Supporting the idea that age cannot predict health performance⁴.
- Women with stage IV disease are more likely to decline treatment compared to women with stage III disease. An alternative interpretation is that patients with stage III disease are more likely to be unsuitable for treatment or die before treatment can begin.
- No conclusions can be drawn regarding the impact of ACE comorbidity score on the decisions leading to no treatment.
- Most patients in this study were discussed at an MDT meeting within 2 weeks of being referred. Patients who were not discussed within 2 weeks are more likely to decline treatment than those who were discussed within 2 weeks.
- CA125 level at diagnosis is an unreliable predictor of why patients may go on to not receive treatment. This finding remains consistent with research into the poor accuracy and reliability of CA125 as a tumour marker.

- Patients with a higher performance status are deemed less suitable for treatment, than those with a lower performance status.
- The incidence of HGSOc (64.15%) reflects that seen in other research⁵. Patients with HGSOc are more likely to be unsuitable for treatment, but less likely to die before treatment than those with unknown histology.

5. FURTHER WORK

- Younger women may be presenting with more aggressive disease, causing a more rapid decline in health. Research into whether the prognosis for younger women is worse than for older women could identify any variation in disease aggression between age groups.
- Yilmaz et al, found that cancer patients often feel defeated by their disease⁸. Exploring the attitudes towards recovery in ovarian cancer patients could give more insight into why patients with stage IV disease are declining treatment at a higher rate than stage III patients.
- A larger cohort of patients may have revealed significance in the reasons for no treatment within each ACE group.
- Repetition of this study around the UK could highlight any geographical variance.
- It would be favourable to incorporate additional variables into any future research involving the 'no treatment' cohort of patients; suggestions include race/ethnicity, family dynamics, BMI.

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