Risk of Ovarian Cancer in Women Seeking Primary Care with Symptoms

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Abstract

Objective: To recognise and measure ovarian cancer signs in women receiving primary care.

Design: Case-control research that included the primary care records of the participants for the year prior to diagnosis.

Setting: Devon, England has 39 general practitioners.

Participants: 212 women over 40 had an initial ovarian cancer diagnosis between 2000 and 2007; 1060 controls with similar age and general practise.

Main outcome measures: From conditional logistic regression analysis, odds ratios and positive predictive values for symptoms.

Results: In a multivariate study, seven symptoms were linked to ovarian cancer. There were 2.5 percent (1.2 percent to 5.9 percent) and 240 (46 to 1200) for abdominal distension, 0.5 percent (0.2 percent to 0.9 percent) and 24 (9.3 to 64) for postmenopausal bleeding, 0.6 percent (0.3 percent to 1.0 percent) and 17 (6.1 to 50) for loss of appetite, and 0.2 percent (0.1 percent to 0.3 percent) and 16 (5.6 to 48) for increased urogenital fow, respectively. At least one of these seven symptoms was reported to primary care prior to diagnosis in 181 (85%) cases and 164 (15%) controls. Abdominal distension, frequent urination, and abdominal discomfort continued to be independently related with an ovarian cancer diagnosis when 180 days of symptoms were excluded.

Conclusions: Often months before the disease is discovered, women with ovarian cancer report their symptoms to their primary care physician. This study gives doctors and those who create guidelines a solid evidence framework for choosing which patients to investigate.

Keywords: Postmenopausal bleeding; Urogenital ow; Abdominal distension; Frequent urination; Abdominal discomfort

Introduction

Over 200 000 new cases of ovarian cancer are diagnosed each year around the world, accounting for 4% of all malignancies in women. Among all gynaecological malignancies, it has the worst prognosis, with a ve-year survival rate of just approximately 35% overall. Compared to late tumours, early cancers (FIGO (International Federation of Gynecology and Obstetrics) stage I or II) have a survival rate of 80–90% (FIGO III and IV). Only 30% of patients are currently diagnosed in these early stages [1]. Since there is now no reliable screening method, improving the ability to recognise cancer symptoms is the best hope for an earlier diagnosis. 5 Such symptoms are typically reported to primary care.

Current referral guidance in the United Kingdom recommends urgent investigation only for abnormal vaginal bleeding and palpable masses, though these recommendations are not required. Several recent studies have shown that symptoms are common, though they frequently go unrecognised by women and doctors. Abdominal pain, abdominal distension, pelvic pain, incontinence, and bloating are just a few of the symptoms that are commonly overlooked by women and doctors [2]. However, nearly all studies of symptomatic ovarian cancer have relied on patient interviews a er diagnosis, a technique that frequently results in recollection or selection bias. Furthermore, since 95 percent of women who visit their primary care provider have a symptom that could be an indicator of ovarian cancer, the symptoms that have been discovered are equally frequent in non-malignant illnesses.

Only three researches, all of which used American medical data to identify symptoms, were based in primary care. For abdominal discomfort, an estimated 0.3 percent positive predictive value was calculated. Clinicians can utilise positive predictive values to help them decide whether to conduct further testing on a woman who exhibits a symptom [3]. In order to determine the positive predictive values for ovarian cancer for each signi cant symptom in primary care, both alone and collectively, we designed this case-control study to be large enough.

Methods

Participants

We identi ed women under 40 who were diagnosed with primary ovarian cancer in England between 2000 and 2007. Invited to participate were all 50 general practises in Exeter, mid-Devon, or east Devon. A total of 97 500 female patients, aged 40 to 69, and 3000 patients older than 70, were among the 39 who were accepted [1].

We found cases by performing a computer system search for the practise. We located histology records and only included women who had negative histology results if the records also included a specialist

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diagnosis supported by substantial clinical evidence [4]. In cases where there was no histological con rmation, the date of diagnosis was assumed to be the date of the positive histology results or the date provided by the specialist.

Using computerised random numbers, ve controls for each instance were matched by age (to one year) and experience. If the controls were still living at the time of the matching case's diagnosis, they were considered eligible [3]. Cases and controls were removed if the medical record was not available, there was no entry in the records in the year prior to diagnosis, the woman had undergone bilateral oophorectomy or ovarian cancer prior to diagnosis, or she resided outside the research area. Reserve controls were used in place of ineligible controls [5].

Data gathering and coding for medical purposes

We created anonymized photocopies of each cancer patient's complete medical history from the year before to diagnosis, and we did the same for the matched controls. Using the primary care-2 international categorization and new codes for symptoms including bloating, three researchers who were unaware of each woman's health categorised all symptoms, whether or not they had previously been linked to ovarian cancer [2]. 13 With 17 chapters covering several body

e positive predictive value for ovarian cancer for each symptom that was independently related in multivariable analysis whether it was reported alone in combination with another symptom, or a second time (shown on diagonal). e univariable positive predictive values and multivariable odds ratios (with 95 percent con dence intervals) for abdominal distension, loss of appetite, increased urinary frequency, and abdominal pain, respectively, were 2.5 percent (1.2 percent to 5.9 percent), 240 (46 to 1200), 0.6 percent (0.3 percent to 1.0 percent), and 17 (6.1 to 50), respectively [5]. While the combination of abdominal distension and loss of appetite was technically speaking unde ned, it was present in 20 cases but not in any controls. Because of this, the positive predictive value was calculated as >5%. e sample sizes for postmenopausal and rectal bleeding were too small to calculate positive predictive values in combinations, but the univariable values were 0.5 percent (95 percent con dence interval: 0.2 percent to 0.9 percent) for postmenopausal bleeding and 0.2 percent (0.1 percent to 0.4 percent) for rectal bleeding, respectively [10]. All of the symptoms had larger positive predictive values in patients under the age of 70, re ecting the increased incidence of ovarian cancer in older women, with the exception of urine frequency.

Discussion

We discovered seven symptoms connected to ovarian cancers that were independently reported to primary care. When we limited our analysis to symptoms reported at least 180 days before to diagnosis, three of this symptoms-abdominal pain, abdominal distension, and urine frequency-remained linked to the outcome. All of the symptoms have previously been documented in studies on secondary care [11]. is is encouraging given the signi cant number of diverse symptoms that were reported to general practise and included in the study's analyses. We determined the likelihood of ovarian cancer over the whole spectrum of signi cant symptoms in primary care, the environment where diagnostic labs are most common.

Possibilities and constraints

is study was conducted in 39 di erent practises; therefore there will unavoidably have been some di erence in how symptoms were recorded. is e ect should have been reduced by practise matching controls and using the same coder for each exercise. If ovarian cancer is a possibility, doctors may take more detailed notes on symptoms [10]. In that case, the study's positive predictive values would have been exaggerated. Prior estimates only included one positive predictive value, which was 0.3% for abdominal discomfort. Our comparable number is encouraging since it indicates that recording bias may have only had a little impact [12]. One- h of the women in this study had none of the seven symptoms noted in their notes. According to interview research, just 7% of women actually have no symptoms. e discrepancy may be attributable to failure to inform the doctor of symptoms or failure to document them, or, more likely, to both. Furthermore, characteristics of symptoms, such as their severity or duration, are rarely captured by retrospective approaches. But according to earlier studies using medical records, women with cancer appear to have no symptoms in a mean of 22% of cases (range: 19–26%). We were able to record more symptoms thanks to our methodology than in earlier trials.

rough computer searches, we found the cases; however, some cases may have been overlooked. According to the national incidence rate, we should have found about 35 new cases annually within the study population. For the rst ve years, the number was lower than this, but it started to rise in 2006-possibly as a result of the quality and outcomes framework, which prompted UK general practitioners to start a cancer register [13]. If the cases we did discover are not indicative of all the women who get ovarian cancer, then this discrepancy won't matter. e age distribution is consistent with national statistics, the histology and staging are consistent with previous case series and thus any bias brought about by missed cases was probably not very signi cant.

Symptoms

All symptoms, with the exception of abdominal distension, showed positive predictive values under 1%. ese low results are a result of the frequent stomach complaints in the "healthy" population as well as the uncommon occurrence of ovarian cancer. However, the 2.5 percent risk of ovarian cancer associated with abdominal distension obviously calls for more study [14]. Over a third of women also mentioned this symptom. Furthermore, even a er we excluded the last six months from the analysis, it continued to be linked to cancer. As previously mentioned, it was equally prevalent in cancers in stages I and II as it was in advanced cancer. However, abdominal distension is not recommended for immediate inquiry according to current guidelines; if it were, some women's diagnosis would be made much sooner.

e symptom of bloating is related. e records of bloating presumably represent a verbatim notation of the word the woman used because this is not a common medical term in the UK. Women, on the other hand, use the phrase to refer to either intermittent or persistent (or progressive) distension. e latter is used more frequently. In this study, people with a history of abdominal distension will include those women who, when the precise symptom was identi ed, switched from using the term "bloating" to the phrase "distension." e term "bloating" may still be used by other physicians. Patients who claim to have distension but are actually experiencing sporadic edema are less likely to do so [15]. As a result, the abdominal distension variable is presumably very "pure," consisting mostly of patients with persistent distension, as opposed to the bloating variable, which probably includes some women who are more accurately de ned as having distension.

e majority of earlier investigations accepted the word bloating without further clari cation and discovered that it was connected to ovarian cancer. However, one small study discovered that intermittent distension was not connected to cancer when the two meanings were separated. Only if we acknowledge that some of individuals diagnosed with bloating actually had persistent distension, are our ndings consistent with this. e substantially reduced odds ratios and positive predictive values demonstrate that, even if true intermittent distension does entail some risk, it is signi cantly lower than chronic distension [16].

Abdominal pain was reported by more than half of women, and this was true whether the women had early-stage or advanced malignancies. Some ladies had it for a number of months prior to diagnosis. However, compared to abdominal distension, the positive predictive value was only 0.3 percent. e low risk, but not zero risk, symptom is a classic problem for people in primary care. Even when a second symptom (other than distension) was present, the combination was still considered to be low risk. We are unable to determine whether lower abdominal or pelvic pain was particularly signi cantly associated with cancer since the exact location of the pain was rarely speci ed in the medical records. Despite the fact that women would typically not be o ered further testing based only on stomach pain due to this low risk, general practitioners must take into account the remote probability of ovarian cancer [17]. erefore, a thorough clinical examination is necessary in cases when a de nite diagnosis cannot be made, and this is followed by evaluation and investigation. e yield in a newly published trial of ovarian cancer screening was about one malignancy

per 2000 women screened. A reassuringly low false positive rate was also present. Since the yield will be substantially higher in the symptomatic women, general practitioners should absolutely look into low-risk but not no-risk pregnant women.

Urinary frequency emerged as the third cancer-related symptom when the last 180 days were excluded. is symptom has been linked to ovarian cancer in the past, but there is no conclusive evidence linking it to early or advanced disease. In comparison to stomach pain or distension, it was less common and carried a lower risk. Naturally, other, more widespread reasons of frequent urination will be looked into rst, but ovarian cancer must be kept in mind as a diagnostic possibility and investigated [18].

e majority of symptom reporting to general practitioners takes place in the three months prior to diagnosis, even though these three symptoms were linked to cancer 180 days before diagnosis. From this study, we are unable to determine if accelerating the diagnosis by this [12] much would have therapeutic advantages; all we can say is that some women may be able to receive a diagnosis up to three months earlier.

Although the primary initial concerns are uterine and colorectal malignancies, respectively, postmenopausal and rectal bleeding are grounds for prompt evaluation in contrast to abdominal distension, abdominal pain, and frequent urination [9]. Early tumours exhibited both of these symptoms a little more frequently. is might re ect rapid investigation, albeit for a di erent cancer. But because these two signs were so uncommon, this early inquiry will only nd a tiny fraction of ovarian malignancies.

Numerous other symptoms, such as constipation and diarrhoea, were linked in univariable analyses in addition to the seven that remained connected to cancer following multivariable analysis. ese have previously been discussed in case studies [19]. However, the existence of additional symptoms diminished the predictive value of these symptoms. For primary care, this makes things a little easier. Doctors shouldn't be overly concerned with isolated gastrointestinal symptoms; it might be challenging enough to remember to investigate ovarian cancer when experiencing abdominal pain.

Conclusion

Currently, identifying cancer in women who have symptoms is the only practical option for hastening the diagnosis of ovarian cancer. Even in early tumours that may be treatable, symptoms are typical and frequently reported. Our ndings are encouraging in that regard since they suggest that early ovarian cancer may be detectable using symptoms. Particularly, abdominal distension is a frequent, serious symptom that requires quick evaluation. Other symptoms call for more conventional primary care techniques, such as examining a patient's history, performing an examination, and taking cancer into account. Although it is not silent, ovarian cancer is not being heard.

Acknowledgement

Con ict of Interest

e author declares has no con ict of interest.

References

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