

with a better prognosis. The defined population that ultimately underwent complete follow-up and analysis as planned comprised 1919 patients. The attritions and challenges in following the initial study plan highlight the complexity of this type of study and the difficulty in interpretation of trial data. Importantly, although there is a potential risk of malignancy when a woman is diagnosed with an adnexal mass, early removal has not been shown to positively affect survival.<sup>7</sup> So far, no effective screening method for ovarian carcinoma has been developed.<sup>8,9</sup> Of the primary analysis population (n=1919), 12 (<1%) patients were diagnosed with malignant or premalignant neoplasms (five primary ovarian cancers, five ovarian low malignant potential tumours, and two metastatic tumours to the ovary).<sup>6</sup> Notably, on retrospective review of the initial ultrasound images, many of the malignant lesions showed sonographic signs suggestive of malignancy and so were misclassified as benign. Ultrasound is an objective test and the operators' expertise directly correlates with accuracy.<sup>10</sup> This radiological variability is discussed by the study authors and they highlight that the proportion of patients judged to be suitable for follow-up was different between centres because of differences in patient characteristics and the level of experience of ultrasound examiners.<sup>6</sup> Additionally, several centres were excluded from the analysis because of low enrolment. Clear definition of systematic and reproducible sonographic criteria that are generalisable and that will lead to diagnostic precision is imperative.

In summary, the current study supports conservative management of adnexal masses that are classified as benign on ultrasound imaging. Longer follow-up of the IOTA5 cohort study might further characterise the natural progression of masses characterised as benign by use of ultrasound and whether or not the incidence of unplanned surgical interventions, complications, or spontaneous resolution increase. The treatment

algorithm for women with adnexal masses is based on clinical judgment and proper counselling. This approach takes into account the patients' symptoms, physical findings, and test interpretation. The knowledge generated from the current trial could add value when counselling women with adnexal masses and could be reassuring to the patient when considering conservative management. The success of such management is dependent on good ultrasonography, and future efforts should continue to strive to improve predictive accuracy.

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- 1 Curtin JP. Management of the adnexal mass. *Gynecol Oncol* 1994; 55: 542-46.
- 2 Le T, Giede C, Salem S, et al. Initial evaluation and referral guidelines for management of pelvic/ovarian masses. *J Obstet Gynaecol Can* 2009; 31: 668-80.
- 3 Prat J. Staging classification for cancer of the ovary, fallopian tube, and peritoneum. *Int J Gynecol Obstet* 2014; 124: 1-5.
- 4 Lycke M, Kristjansdottir B, Sundfeldt K. A multicenter clinical trial validating the performance of HE4, CA125, risk of ovarian malignancy algorithm and risk of malignancy index. *Gynecol Oncol* 2018; 151: 159-65.
- 5 Foti PV, Attinà G, Spadola S, et al. MR imaging of ovarian masses: classification and differential diagnosis. *Insights Imaging* 2016; 7: 21-41.
- 6 Froyman R, Landolfo C, De Cock B, et al. Risk of complications in patients with conservatively managed ovarian tumours (IOTA5): a 2-year interim analysis of a multicentre, prospective, cohort study. *Lancet Oncol* 2019; published online Feb 5. [http://dx.doi.org/10.1016/S1470-2045\(18\)30837-4](http://dx.doi.org/10.1016/S1470-2045(18)30837-4).
- 7 Crayford TJB, Campbell S, Bourne TH, et al. Benign ovarian cysts and ovarian cancer: a cohort study with implications for screening. *Lancet* 2000; 355: 1060-63.
- 8 Buys SS, Partridge E, Black A, et al. Effect of screening on ovarian cancer mortality: the Prostate, Lung, Colorectal and Ovarian (PLCO) cancer screening randomized controlled trial. *JAMA* 2011; 305: 2295-303.
- 9 Jacobs IJ, Menon U, Ryan A, et al. Ovarian cancer screening and mortality in the UK Collaborative Trial of Ovarian Cancer Screening (UKCTOCS): a randomised controlled trial. *Lancet* 2016; 387: 945-56.
- 10 Timmerman D, Schwärzler P, Collins WP, et al. Subjective assessment of adnexal masses with the use of ultrasonography: an analysis of interobserver variability and experience. *Ultrasound Obstet Gynecol* 1999; 13: 11-16.

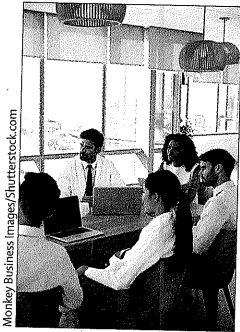
## Female representation among US National Comprehensive Cancer Network guideline panel members



The proportion of female physicians entering the field of oncology in the USA has steadily increased during the past two decades. Nearly half of US haematology-

oncology fellowship trainees are women, and the proportion of female academic oncology faculty, which is increasing at the same rate as trainees, but with a

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decade lag, now approaches 40%.<sup>1</sup> There has also been an increase in female medical oncologists in Europe, and more than 40% of members of the European Society for Medical Oncology are women.<sup>2</sup> Despite the increasing presence of women in academic oncology, gender disparity in the achievement of influential senior positions such as full professorships, departmental chairs, society board members, and executive leadership remains a concern globally.<sup>3-5</sup>

Women face barriers to advancement in academic medicine compared with their male counterparts, hindering their subsequent rise to top-ranking roles. For example, women are offered substantially fewer early career sponsorship opportunities than men.<sup>6</sup> Even after successful receipt of National Institutes of Health K-series awards, women ultimately publish fewer manuscripts and obtain less funding than men, independent of domestic responsibilities.<sup>7</sup> With such limitations, it is not surprising that women are ultimately less likely to attain senior academic positions than are men. Yet, among the women who do overcome hurdles to achieve the conventional metrics for research success, commonly defined by the extent of publications and funding awarded, whether gender biases for selection of senior leadership positions exist remains unclear.

The National Comprehensive Cancer Network (NCCN) guidelines are the most widely used source of clinical practice information in oncology in the USA. These

guidelines are routinely used to inform standard-of-care treatment decisions and reimbursement for off-label cancer drugs. Disease-specific panel members involved in creating these guidelines are esteemed academic oncologists, including pathologists, radiation oncologists, surgical oncologists, and medical oncologists, from highly regarded cancer centres. Professional advancement into such a leadership position is an achievement that depends largely on research success and academic distinction.

In the absence of gender bias, we would expect the representation of women in influential positions, such as the NCCN guidelines panel of experts, to mirror the representation of successful female cancer researchers. To investigate this hypothesis, we compared the proportion of female NCCN guideline panel members to the proportion of female research authors of influential manuscripts supporting these guidelines.

We tabulated the number of female versus male NCCN guideline panel members for 22 disease sites, including solid tumours and haematological malignancies. Gender was first determined by review of first name and, if we were uncertain, we did additional internet searches to discern gender, using best guess, on the basis of pronoun descriptors or images on publicly available institutional websites. We randomly sampled 50 of the references used to support treatment recommendations within each NCCN guideline panel that consisted of original research, were US-based, and were published in 2005 or later. We recorded author genders for the first, second, and last authors using the same method as described for panel members. Authors were only counted once in the analysis in the case of multiple publications within a single guideline.

Using a binomial test, we examined whether the observed proportion of female panel members deviates significantly from the expected proportion on the basis of overall female authorship. We calculated a Pearson correlation coefficient to examine the extent to which the proportion of female authorship is associated with the gender composition across the NCCN guideline panels. Statistical tests were two-sided and p-values less than 0.05 were considered significant.

The proportion of female NCCN panel members did not differ significantly from that of authors of seminal articles supporting the guidelines (194 [29%] of 670 members vs 769 [30%] of 2530 authors;  $p=0.44$ ).

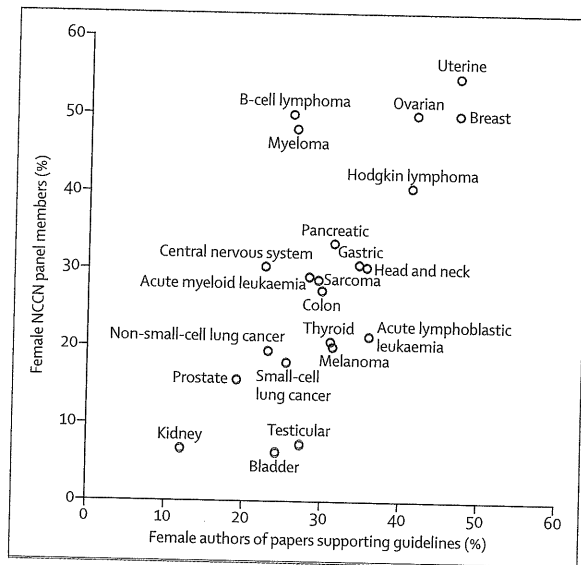


Figure: Proportion of women on NCCN guideline panels versus proportion of female authors of influential papers supporting the guidelines  
NCCN=National Comprehensive Cancer Network.

There was also a significant linear relationship between female NCCN panel members and research authors ( $r=0.67$ ,  $p=0.0006$ ) across the various guidelines (figure). Cancers usually specific to women (breast, uterine, and ovarian cancers) had both the highest proportion of female panel members and authorship. Genitourinary cancers (with the exception of prostate cancer) tended to have fewer women on guideline panels when compared with the proportion of female authors. These are historically male-dominated specialties in the USA. B-cell lymphomas and myeloma had notably more women on their respective panels compared with the extent of female authorship.

Thus, despite some imbalances within disease sites, the composition of female NCCN panel members overall was consistent with that of a large sample of influential female cancer researchers. Across guidelines, authorship was positively correlated with the proportion of women selected as panel members. This finding suggests that as more women surmount barriers to achieve research success in academia, the proportion of women in influential leadership roles can increase accordingly, as exemplified in the female-specific subspecialties.

It is encouraging that selection of guideline panel members for the NCCN, a noteworthy resource in oncology practice in the USA, seems independent of gender bias. However, these findings should not detract from the known underlying gender gaps in research achievement among advancing academic faculty. The proportion of female NCCN panelists (29%) is less than the proportion of female academic oncologists overall (40%). Given that nearly 15 years in academic medicine are required before promotion to senior positions, NCCN panel members today would probably represent the proportion of female academic oncologists in an earlier generation. For example, in 2005, women only comprised 30% of academic haematology-oncology faculty.<sup>1</sup> Previous data suggest that board membership

for prominent oncology societies in the USA and Europe does fall slightly short of this goal, with women comprising roughly 25% of board members in 2016.<sup>2</sup>

Our results indicate that the gender composition of NCCN cancer experts appropriately reflects the pool of successful researchers. As more women enter the academic oncology community, we expect that the percentage of women in senior leadership positions will continue to increase. However, this outcome depends primarily on efforts to bolster the academic experience and outcomes for the current cohort of female junior faculty members to ensure their research potential is realised.

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- 1 Ahmed AA, Hwang WT, Holliday EB, et al. Female representation in the academic oncology physician workforce: radiation oncology losing ground to hematology oncology. *Int J Radiat Oncol Biol Phys* 2017; **98**: 31–33.
- 2 Hofstadter-Thalmann E, Dafni U, Allen T, et al. Report on the status of women occupying leadership roles in oncology. *ESMO Open* 2018; **3**: e000423.
- 3 Jolliff L J, Coakley E, Sloane RA. Women in U.S. academic medicine and science: statistics and benchmarking report. Washington, DC: Association of American Medical Colleges, 2012.
- 4 Travis EL, Doty L, Helitzer DL. Sponsorship: a path to the academic medicine C-suite for women faculty? *Acad Med* 2013; **88**: 1414–17.
- 5 Banerjee S, Dafni U, Allen T, et al. Gender-related challenges facing oncologists: the results of the ESMO Women for Oncology Committee survey. *ESMO Open* 2018; **3**: e000422.
- 6 Patton EW, Griffith KA, Jones RD, Stewart A, Ubel PA, Jaggi R. Differences in mentor-mentee sponsorship in male vs female recipients of National Institutes of Health grants. *JAMA Intern Med* 2017; **177**: 580–82.
- 7 Jaggi R, Griffith KA, Jones RD, Stewart A, Ubel PA. Factors associated with success of clinician-researchers receiving career development awards from the National Institutes of Health: a longitudinal cohort study. *Acad Med* 2017; **92**: 1429–39.

## Gastric cancer surgery: the importance of technique and not only the extent of lymph node dissection



Radical gastrectomy with extended lymph node dissection is standard for gastric cancer.<sup>1,2</sup> The extent of lymph node dissection is defined as D1 for the

perigastric area, whereas D2 lymph node dissection comprises tissue surrounding the next level of lymphatic vessels, including the hepatic artery proper, common