

## Informing women with endometriosis about ovarian cancer risk

We acknowledge the ongoing concerns of women with endometriosis, a chronic gynaecological condition affecting about 176 million women worldwide, regarding information about their increased ovarian cancer risk. Endometriosis is an inflammatory disease process characterised by lesions of endometrial-like tissue outside the uterus—commonly on the pelvic peritoneum and ovaries—that is associated with debilitating pelvic pain and infertility.<sup>1</sup> Although benign, endometriosis has cancer-like features,<sup>2</sup> a mutation profile similar to that of ovarian cancer,<sup>3</sup> and an increased ovarian cancer risk.<sup>4</sup> These observations pose management challenges to clinicians who care for women with endometriosis and might have important public health

implications.

The health of women with endometriosis can be affected by care decisions that might result from the potential misinterpretation of the link between endometriosis and ovarian cancer.<sup>3</sup> Growing concerns of women with endometriosis might lead clinicians to consider non-evidence-based screening for ovarian cancer (eg, transvaginal ultrasound, serum CA-125 measurements) and radical preventive measures, such as risk-reducing bilateral salpingo-oophorectomy. Therefore, translation of the results from comorbidities research about relative risks into lay language that clinicians and women can interpret easily is critical.

In the general population, it is estimated that one woman in 76 (1.31%) will develop ovarian cancer in her lifetime.<sup>5</sup> Considering the relative risks calculated from meta-analyses<sup>6,7</sup> of endometriosis and ovarian cancer (as high as 1.42), the lifetime risk of ovarian cancer among women with

endometriosis is 1.80%—fewer than two women in 100. This small increase in absolute risk should thus reassure women with endometriosis that their lifetime ovarian cancer risk is quite low and, in absolute risk scales, is only negligibly different from women without endometriosis. Bilateral salpingo-oophorectomy carries the risks of potential surgical complications and early-onset menopause in women who are premenopausal, which has been associated with a 162% increased incidence of cardiovascular disease,<sup>8</sup> the leading cause of death among women who are menopausal. Moreover, screening for ovarian cancer, with its low specificity, can lead to unnecessary invasive surgical procedures.

Based on this evidence, we propose that clinicians reassure women with endometriosis that their ovarian cancer risk is low and that intervention measures, such as bilateral salpingo-oophorectomy, solely to prevent ovarian cancer, are not justified. To guide clinicians in addressing the concerns of women with endometriosis regarding their long-term ovarian cancer risk, we suggest several key messages (table).

AWH is the past chair of the European Society of Human Reproduction and Embryology (ESHRE) Special Interest Group for Endometriosis and Endometrial Disorders, a member of the National Institute for Health and Care Excellence (NICE) Endometriosis Guideline Group, a past member of the ESHRE Endometriosis Guideline Group, medical adviser to Endometriosis UK and Pelvic Pain Support Network, and deputy editor of *Human Reproduction Open*. AWH receives funding from Wellbeing of Women, the Medical Research Council (MRC), the National Institute for Health Research, and Ferring. SAM is chair of the American Society for Reproductive Medicine Endometriosis Special Interest Group, treasurer of the World Endometriosis Society, secretary of the World Endometriosis Research Foundation, and a statistical editor for *Human Reproduction*. SAM received funding from the National Institutes of Health and the J Willard and Alice S Marriott Foundation. MK declares no competing interests. We thank Lynda Harrison (woman with endometriosis), Christine West (gynaecologist), Scott Fegan (gynaecological oncologist), Camille Busby-Earle (gynaecological oncologist), Emma Cox (chief executive of Endometriosis UK), Lone Hummelshoj (chief executive of World Endometriosis Society), and Neil Johnson (president of World Endometriosis Society) for their comments and feedback on the content of this letter.

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### Panel: Key messages for clinicians addressing the concerns of women with endometriosis about ovarian cancer risk

#### Am I going to get ovarian cancer?

- Most women with endometriosis never develop ovarian cancer. Although several studies report an increased ovarian cancer risk, evidence suggests that the overall likelihood of you developing ovarian cancer is low. Thus, you should be aware of, but not worried about, the effect of endometriosis on your ovarian cancer risk.
- Although 1.3% of women in the general female population will develop ovarian cancer in their lifetime, this proportion is still less than 2% in women with endometriosis. Thus, although the risk is increased, your lifetime risk is low and is not substantially different from that in women without endometriosis. To put the risk in perspective, according to recent estimates, 39% of women who inherit a harmful BRCA1 mutation and 11–17% who inherit a harmful BRCA2 mutation—the rare genes that predispose to breast cancer—will develop ovarian cancer by 70 years of age. Furthermore, as a woman in the general population, your risks of breast (12%), lung (6%), and bowel (4%) cancers are still higher than your risk of developing ovarian cancer.
- Certain types of ovarian cancer are more commonly associated with a history of endometriosis. These endometriosis-associated cancers tend to be detected at an earlier stage and have a better prognosis than other types of ovarian cancer.

#### What can I do to lower my cancer risk?

- No clear evidence exists that transvaginal ultrasound or serum CA-125 measurements can detect ovarian cancers early or that risk-reducing surgery to remove the ovaries can save lives. Generally, to improve health and reduce the risk of cancer, try to have a balanced diet with low intake of alcohol, exercise regularly, maintain a healthy weight, and do not smoke.

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## To be a scientist in Mexico... or not to be?

We want to provide some clarifications regarding points discussed in previous letters, published in *The Lancet* (June 17, p 2373)<sup>1</sup> and *Science*,<sup>2</sup> that are related to government cuts to science and fellowships in Mexico. Once again, the Mexican Government has deceived the academic community with false promises.<sup>3</sup>

Historically, the Mexican Government's lack of interest in science has kept investment in research low. As a result, the number of scientists who are members of the National System of Researchers is small (25 072 in 2016)<sup>4</sup>

compared with Mexico's population (around 128 million). Until 2016, there had been a modest but sustained increase in funding for science. However, a severe cut in 2017 to science funds has now threatened the entire research system in Mexico. In particular, the budget of the Consejo Nacional de Ciencia y Tecnología (CONACYT), the only federal agency that funds research, was reduced by 25%.<sup>2</sup> Considering the very severe devaluation of the Mexican peso and the highest inflation rate in 8 years,<sup>5</sup> the impact on scientific capacity is substantial. There is no financial support for equipment maintenance or publication charges, and the support sustaining both new and ongoing projects has been greatly diminished (with cuts of up to 50% in several cases). Often, researchers receive decisions from CONACYT indicating that an application has been approved, but without funds. In addition to this desolate panorama, high taxes and administrative charges mean that any equipment costs nearly twice as much in Mexico than, for example, in Canada, (which is also a member of the North American Free Trade Agreement).

By contrast to general belief, Mexico is not a poor country. However, government corruption costs the country countless billions of Mexican pesos, and scandals appear daily in the national media. Political parties, deputies, and high-ranking officials of the government enjoy incredibly high budgets.<sup>6</sup>

With this Letter, we want to make a call for all Mexican scientists to be heard, if not by this administration, which has around 12 months left of its term, then by the next. We cannot rely solely on the unprecedented demonstration on April 24, 2017, when academics from across Mexico gathered to protest against these policies.<sup>7</sup>

A new government will take power in December, 2018, and people in charge should recognise that the scientific capacity of our nation is at risk, compromising our ability to do scientific research and jeopardising

not only the present but also the generations to come. We must ask, can we be competent scientists in these conditions?

We declare no competing interests.

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## A global perspective on the history of anaesthesia

The overview of the development of anaesthesia by Thomas Schlich in *The Lancet* (Sept 9, p 1020)<sup>1</sup> provided fascinating insight into the changing relationship between surgeons, physicians, and the patient's body in western medicine. A more global view of medical history affords the opportunity for other sensibilities. The first recorded use of a general anaesthetic in Japan was by Hanaoka Seishu in 1804,<sup>2</sup> and it is possible that a similar approach was