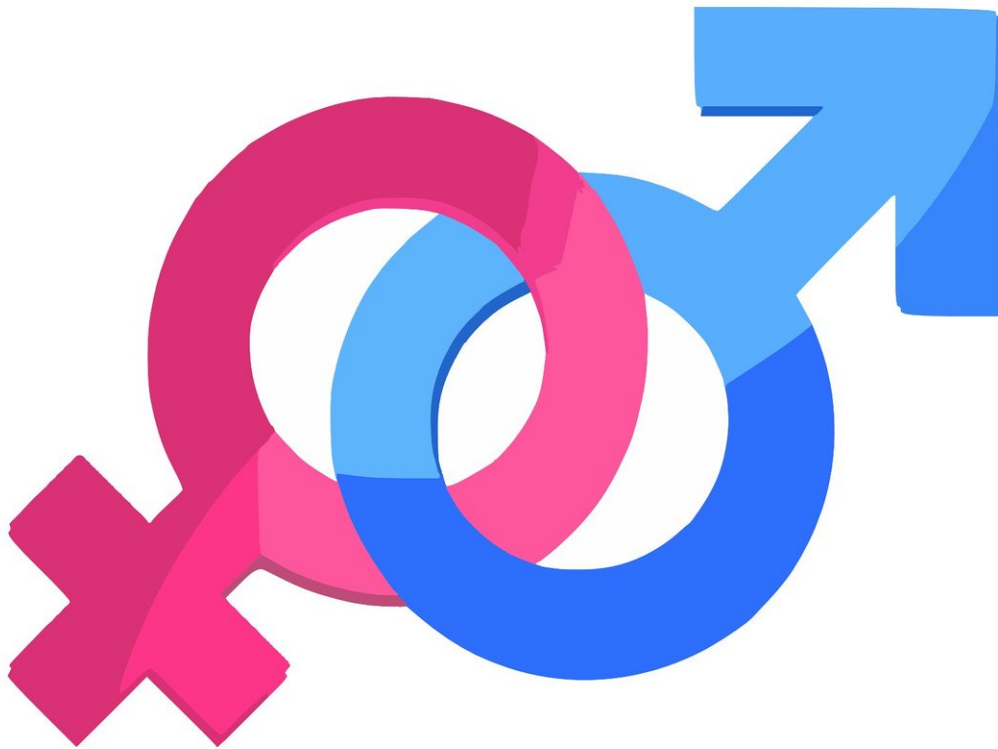


# Men and women are different: Why medical oncology needs to restate the obvious

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Gender-based approaches to studying and treating disease have remained largely unexplored in medical oncology, despite the field's growing interest in precision medicine and accumulating evidence that sex is a major factor in disease risk and response to treatment. At the ESMO workshop, "Gender medicine meets oncology", to be held in Lausanne, Switzerland, on 30 November and 1 December 2018, a multidisciplinary faculty of experts will discuss the concepts and methods of gender medicine and their implications for clinical practice and research in oncology.

According to Dr. Anna Dorothea Wagner from Lausanne University Hospital, who initiated the workshop and co-authored a recent paper on the subject, "the need for further research to understand gender impacts in oncology is significant." This exceptional meeting format, which will bring together pharmacologists, statisticians, basic scientists and medical oncologists from different specialties, will in fact be the first organised discussion of gender medicine in the oncology community.

"With efforts to include sex aspects in biomedical research abounding in other areas, like cardiovascular medicine, it was high time for us in the oncology field to take notice. Now, ESMO is providing the ideal setting to do just that," said Wagner. In five consecutive sessions, participants will take stock of existing evidence and produce perspectives for the future of this possibly important aspect of cancer treatment and care.

Wagner's paper had already pointed to various areas in which gender differences have been known to exist for many years but are still poorly understood. These will be picked up at the ESMO workshop in Lausanne, where several discussions will focus on the differences in body composition, hormones, genetic makeup and metabolism. For example, women are more prone to the toxicity of different types of drugs, which is likely a result of their metabolising these differently from men, due to factors that could range from higher body fat levels to

differences in the activity of drug-metabolising enzymes.

"Toxicity is a problem in itself, not least because it can cause cancer patients to discontinue treatment," Wagner explained. In the case of chemotherapy, however, where chemotherapy-related toxicity is usually correlated with response, lower rates of toxicity observed in men could therefore be interpreted as a sign of relative underdosing, which may help to explain their poorer prognosis in several cancer types. "This surely deserves further investigation, as gender-specific treatment strategies might be able to improve outcomes, in particular with regard to doses and types of drugs," said Wagner.

The known differences in immune responses between men and women are another question that will be addressed in more detail during the workshop.

When it comes to drug development, recent efforts to bring more women into traditionally male-dominated phase I and phase II trials have been only moderately successful, with enrollment of female patients remaining at a low 37%. Additionally, almost two thirds of clinical trials still do not report any results by gender.

While gender differences in efficacy are reported more often, gender differences related to toxicity are only rarely analysed and systematically reported. "At the ESMO workshop in December, we will dedicate an entire session to the methodological aspects of integrating gender medicine into cancer clinical research. That is one step from which we all might benefit – men and women alike," Wagner concluded.

**More information:** Berna C. Özdemir et al. Sex Differences in Efficacy and Toxicity of Systemic Treatments: An Undervalued Issue in the Era of Precision Oncology, *Journal of Clinical Oncology* (2018). DOI: 10.1200/JCO.2018.78.3290

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