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EUSOBI Increasing Participation From Europe And Beyond



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Prof. Sardanelli, why did you choose to specialise in breast imaging?

To be honest, it was the result of a series of events, not of my special preference. At the beginning of the 1980s, I was a staff radiologist, mainly dedicated to MRI and CT, at the Radiology Department of the University of Genoa, Italy. A joint initiative between the Hospital and the National Cancer Institute had created a Senology Centre with much activity dedicated to breast imaging (i.e., mammography, sonography and needle biopsy). My mentor and boss, Prof. Giorgio Cittadini, asked me to take responsibility for diagnostic imaging at this centre while also keeping responsibility for MRI activity. I accepted this nomination enthusiastically. The combination explains my interest in breast MRI.

It seems that not a month goes by without discussion on the effectiveness of mammographic screening, and in Switzerland they are recommending that mass screening stops. Do you see a continuing role for mammographic screening?

The latest evidence, published in the BMJ on June 17, 2014 by Weedon- Fekjaer et al. from Norway is that "Invitation to modern mammography screening may reduce deaths from breast cancer by about 28%". However, if we consider the impact on women who really get mammograms every two years, there is evidence that mortality reduction is over 40%. Mammographic screening, allowing for an earlier diagnosis of breast cancer, strongly contributed to the reduction of mortality from breast cancer, together with better and better therapies including surgery, radiation, chemo-, and hormonal therapy. The current discussion on screening limitations should be focused on methods to obtain better results from it, not on stopping it. Key points are the following: extension from 40 to 75 years of age; special programmes using MRI for highrisk women; reducing recall rate; reducing interval cancer rate (i.e., underdiagnosis). The very good news is that the evolution from film-screen to digital mammography not only reduced the x-ray dose delivered to woman, but also opened the way to a dramatic technological advancement: digital breast tomosynthesis (DBT). DBT is now at the take-off point. A relevant increase in cancer detection rate and a strong reduction in recall rate

have already been shown using DBT in the screening setting. A reduction in interval cancer rate is expected. It will be the mammography of the near future. Any evaluation of the results of screening mammography will not have real sense if not considering DBT as the 'modern' mammography.

In your opinion, is overdiagnosis an issue in mammographic screening? If so, how can radiologists help to reduce overdiagnosis and overtreatment resulting from mammographic screening?

Overdiagnosis, i.e. the diagnosis of a disease, which would never become clinically significant during the patient's lifetime, is an issue. Notably it is an issue not only for screening mammography, but also for the day-by-day detection of incidental findings at cross-sectional imaging in radiology practice. Probably the more appropriate term 'overdetection' should be used, especially in the screening setting. 'Diagnosis' and 'overdiagnosis' are the conclusive steps of a pathway in which other members of the breast care team are involved, especially pathologists (what about the blurred pathological border between atypical ductal hyperplasia, non-malignant, and ductal carcinoma in situ, malignant?). Notably, overdetection is an unavoidable trade-off we should pay when we want to get an early diagnosis of whatever disease, i.e. before the onset of symptoms or signs. Due to biological variability and to competing causes of death, a fraction of early diagnosed cases will be, by default, overdetected. The problem is how much overdetection we have and what overtreatment is caused by the overdetection. Unfortunately, estimates of overdetection by screening mammography may vary hugely, depending on type of studies considered, statistical methods and statistical assumptions. In the EUSOBI recommendations for women's information, we cautiously said that 5% to 20% of breast cancers could be overdetected by screening (Sardanelli and Helbich 2012). To be short, according to a very recent estimation, for every 1,000 women screened biennially from ages 50-51 to 68-69 years and followed up until age 79 years, 7-9 breast cancer deaths are avoided, 4 cancers are overdiagnosed, 170 women have at least one recall followed by noninvasive assessment with a negative result, and 30 women have at least one recall followed by invasive procedures yielding a negative result. The chance of a death being avoided by mammography screening is more than that of overdiagnosis (Paci et al. 2014). We must communicate these outcomes to women offered service screening in Europe. Finally, we should note that while much attention is paid to overdiagnosis, overtreatment is not equally considered. More efforts should be dedicated to reduce overtreatment, for example to avoid surgical excision of high-risk (B3) lesions using contrast-enhanced MRI as gatekeeper to surgery (Londero et al. 2012).

You are well-known for your interest in evidence-based radiology. How can radiologists ensure that what they are doing is based on the best possible evidence, particularly in breast imaging?

Education, education and education. The breast radiologist of the future will have to be not only a radiologist dedicated to breast, but also an epidemiologist and an expert in breast cancer therapy. Changes are faster and faster, the evidence is modified every year, perhaps every month. Look at DBT: the discussion on the x-ray dose is now closed by the possibility to obtain virtual 2D images from the 3D dataset. Thus, the ability to read and understand scientific papers is more and more a must for each of us. As a consequence, knowing the methodology of radiological research is important as is being able to read mammograms or to perform needle biopsies. The rapidity of changes implies that recommendations of medical bodies may be not always useful. Moreover, according to evidence-based medicine principles, we have to always consider choices and preferences of the individual patient. Thus, the breast radiologist should always consider "the evidence", but also use medical common sense. To give two different examples: 1) today DBT can be firstly used as a substitute for dedicated views and/or ultrasound when an abnormality is detected on a 2D mammogram; 2) breast MRI is currently used in the case of suspicious nipple discharge after mammography and ultrasound and ductogalactography is more and more rarely performed.

Can you tell us about the multicentre study on preoperative breast MRI in clinical practice, which you are leading?

The "Preoperative Breast MRI in Clinical Practice: Multicenter International Prospective Meta-Analysis (MIPA) of Individual Woman Data" study is ongoing (http://www.eusobi.org/html/img/pool/MIPA_Outline.pdf). More than 1,000 patients were enrolled by about 20 centres active in Europe, the U.S. and Australia. It's already a very good result. We have to thank Bayer for supporting this great observational study. I hope to close the enrolment within less than 2 years. We will have a huge amount of data to study and to publish.

What is the role of breast MRI when mammographic or ultrasound findings are inconclusive?

MRI should be used in cases where you don't know where to put a needle for biopsy or, for different reasons, when you cannot perform an imagebased needle biopsy.

What are the most promising recent technologies for breast imaging?

- Digital breast tomosynthesis for screening women at average risk of breast cancer.
- Breast MRI for defined indications (Sardanelli et al. 2010).

What role do you see for molecular breast imaging?

Apart from proton and phosphorus MR spectroscopy, which remains a research tool, breast molecular imaging is nuclide-based imaging, which implies a non-negligible ionising radiation exposure. Thus, even if research in this field is welcome (we opened to nuclear physicians the awarded sessions at the EUSOBI Amsterdam meeting), the potential expansion for its clinical use is – in my view – relatively limited.

The EUSOBI annual scientific meeting in amsterdam in september will include two discussions – on the role of preoperative MRI and breast cancer screening for women over 70? What are you expecting from these discussions?

For the first topic, a frank and honest debate comparing different views on preoperative MRI, showing that nobody possesses the truth and that research is still needed. For the second one, I hope that speakers will show that the longer and longer women's lifetime reduces the competing causes of death, allowing early diagnosis to save lives.

What are you most looking forward to at the EUSOBI annual scientific meeting?

On one side, the larger and larger participation from European countries. On the other side, the increasing participation from non-European countries. This year, we will have the session "EUSOBI meets India"... EUSOBI is more and more becoming a reference point for breast radiologists all over the world.

Interviewed by

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