
Volume 10 - Issue 2, 2010 - Interview: Imaging Leaders

Interview with Prof. Francesco Sardanelli

Prof. Francesco Sardanelli is associate professor of radiology at the University of Milan, Italy, as well as director of the radiology unit at the Scientific Institute Policlinico San Donato in the same city. He is a well-respected expert in research methodology and statistics applied to medical imaging and in multimodality breast investigation, in contrast agents for MR imaging, and MR technology. He is a consultant for the Istituto Superiore di Sanità, an organ of the Italian Ministry of Health, for the project "Multimodality Surveillance of Women at Genetic-Familial High-Risk of Breast Cancer".

Moreover, he has expertise in cardiovascular MR, CT and MR imaging of multiple sclerosis. As well as leading more than 400 presentations at courses and scientific meetings, he has published five books, 45 chapters in books, four translations of books or chapter in books, 184 articles – 103 of them on peer-reviewed journals with a total impact factor of 270, and 436 scientific congress abstracts. Since 2009, he is director of EuroAIM (European Network for the Assessment of Imaging in Medicine), a division of the European Institute for Biomedical Imaging Research (EIBIR), which is supported by the European Society of Radiology (ESR).

How did You End Up Choosing Radiology?

I chose radiology after encountering Prof. Giorgio Cittadini at the University of Genoa School of Medicine. I had the possibility to do a graduation thesis in pharmacology and to go for two years to Temple University following graduation. However, I was fascinated by radiology and by the inspirational teaching abilities of Prof. Cittadini. Moreover, I was highly interested in applying technology to medicine and I did not want to choose a "narrow" specialty. Thus, I selected radiology, which in my opinion is the broadest specialty, due to its applications across the whole body and even beyond medicine, for example as we now see with fMRI in neurosciences.

Please Describe a Typical Working Day for You.

I wake up at 5.30 AM, have breakfast and work out for up to an hour at home while watching the news on the TV. I like to remain informed about current affairs in Italy and around the world, and the morning during my workout is a good time for this, especially since I never read newspapers any more. I usually arrive at work between 7 and 7.30 AM, take a very brief break of 15 minutes for a light lunch at 14.00 PM and am usually at work until 19.30 PM.

What are Your Main 'Management' Related Activities at Work?

The top management activity for me is in the area of human resources, in the coordination of co-workers such as staff radiologists, teaching residents, and organisation of work schedules, with particular reference to radiologic technologists, nurses, and administrative personnel. At least two hours per day are dedicated to personal conversations on problems arising from day-to-day activities, necessitating specific solutions. Notably, the door of my office is always open with few exceptions during the day and I am always available for the evaluation of difficult radiological cases.

How did You Come to be Selected as Director of EuroAIM?

My role in EuroAIM is down to the continuing support of Prof. Gabriel Krestin, Head of the Research Committee of the ESR. During a meeting of this committee, he asked whether someone was available to guide a group on evidence-based radiology (EBR). I proposed myself, and Krestin accepted. I proposed a first draft of an article and as a result, my colleagues Myriam Hunink, Fiona Gilbert, Giovanni di Leo and Gabriel Krestin contributed to the final version, which has been published in 'European Radiology'. There, we outlined a possible ESR policy for EBR. On this basis, Krestin suggested me for the role of EuroAIM director.

What is the Main Focus of Your Tenure Within EuroAIM?

The main focus is:

1. To plan a series of gap analyses under the following themes: what radiological topics are covered by recent systematic review and meta-analyses and what topics are not covered; to discern what radiological topics not covered by recent systematic review and meta-analyses have enough original primary studies to be meta-analysed and what topics do not;
2. To select topics to determine which primary studies are available while the systematic reviews and meta-analyses that are necessary to do them are lacking and,
3. To define shared rules for issuing EBRbased European radiological guidelines.

The creation of a dedicated evidence-based radiology website managed mainly by a group of young radiologists and residents, is also likely.

Why is Evidence-Based Radiology so Crucial?

The EBR approach to medical imaging is crucial for three reasons, as follows:

1. **Ethics:** To do the best for our patients;
2. **Economics:** To avoid useless imaging exams, and
3. **Professional:** If radiologists don't begin using EBR reliably then other specialists who use medical imaging may apply it themselves, and

may draw conclusions in favour of or against certain diagnostic or interventional procedures. In my opinion, it would be better that radiologists avoid having decisions made about the best use of their diagnostic or interventional health technology by other specialists.

What Would You Describe as the Greatest Accomplishment of Your Career so Far, and Why?

The greatest accomplishments of my career are in the three areas of my work:

Academic – My role of associate professor at Milan University;

Clinical – Being made director of radiology at the Policlinico San Donato, and

Scientific – Recently, a book I wrote entitled "Biostatistics for Radiologists" was published.

What are the Most Exciting Developments Taking Place in the Field of Breast Imaging?

The most important news in breast imaging is the increasing role of MR imaging. I recently guided a large interdisciplinary group of breast cancer specialists on this topic promoted by EUSOMA (European Society of Breast Cancer Specialists) and the results of this working group are recently published in the European Journal of Cancer.

Indications for breast MRI will increase in the future, in particular for screening (from high to intermediate risk) and presurgical staging. Breast density (calculated with digital mammography or MR imaging) will enter models for predicting the risk of breast cancer. Tomosynthesis will change our way of thinking about mammography, decreasing recall rates and reducing interval cancers.

More difficult is to foresee what will happen with 3D sonography. Imaging-guided treatment (focused ultrasound or radiofrequency ablation) may change the therapy of small breast cancers and radiology should try to capitalise on this momentum.

What are the Most Interesting Developments in Cardiac Imaging?

On the subject of developments in cardiac imaging, the start-up of multidetector coronary CT after 2000 and its increasing use obscured the role of cardiac MR imaging. Cooperation with cardiologists is crucial. However, we need to increase our awareness of developments in cardiology and to monitor its culture, to maintain our role in managing cardiac imaging procedures and to defend our professional space from competition from cardiologists. For this aim, radiologists need to cultivate abilities in both cardiac MR and CT, taking in high consideration the aim of reducing radiation exposure according to the ALARA (as low as reasonably achievable) principle.

How do You Balance Your Workload, in Order to Meet all Your Professional Responsibilities?

After 2006, I gave up any professional private activity external to the hospital. The most valuable advice I can pass on is to pay attention to human resources. Spend as much as possible of your time in conversation with your coworkers and fellows. Men and women are more important than technology. Balancing your workload with a personal life, however, is an ongoing challenge – down-time is important. During the weekend I usually write or make reviews for journals, but also I spend time with my family, play the piano and read books. The last one I finished is called "Five equations that changed the world", written by Michael Guillen.

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