BY EMANUELE NERI

The CT Dose Repository working group

The European CT Dose Repository Subgroup is one of the four EuroSafe Imaging subgroups.

The Subgroup was created in March 2016 to explore the clinical impact of tools for automatic dose monitoring and to provide recommendations and best practice in CT, as well as to reassure radiologists about the reliability of statistics obtained from such systems. To reach these goals the Subgroup has drafted a questionnaire that will be distributed to European Society of Radiology (ESR) members. The results of the questionnaire could be helpful in preparing recommendations on how to improve the CT dosimetric behaviour in radiological departments (with the help of such tools).

The dose monitoring tools allow a precise internal audit of dose behaviour in the radiology department, while tracking the general dosimetric trend, which mainly depends on the adopted imaging protocols.

Such imaging protocols are frequently designed from an anatomical orientation with few concerns about the specific clinical context in which the exam is performed. In parallel, the attention to dose reference levels (DRL) is oriented by the anatomical segments, and not by the clinical context.

One example is that lung CT for screening has the same scan length of a lung CT for nodule characterisation, as well for pulmonary embolism, but these three exams are highly different by indication, and as a consequence by imaging protocols that influence the dose levels. Therefore, it is clear that the actual dose reference levels, based on the anatomical focus, do not reflect the standard of dose anymore. Furthermore, in the same clinical context, there is potential variability in patient anatomy, physiology and target disease, which influences the CT imaging protocols.

Dose monitoring systems could therefore be a helpful tool for establishing new dose reference levels based on the clinical indications and on the patient's specific characteristics, driving the actual DRL based on anatomy toward clinical indication reference levels.

ECR 2017 will feature a dedicated session on the European CT Dose Repository. It will focus on the current adoption and impact of dose-tracking tools in the daily practice of radiological departments, and provide an overview of the work carried out by the EuroSafe Imaging Subgroup.

Technological and scientific developments have led to a remarkable increase in radiation exposure. Thus, the technical implementation and benefits of dose-tracking tools will be presented in the first talk. The implementation of radiation dose index monitoring (RDIM) systems, which passively or actively collect all the radiation dose index (RDI) from ionising radiation modalities, will be introduced and open issues related to integration, e.g. standards, protocols, etc. will be discussed.

The session will also present how dose-tracking tools change the daily practice of radiographers and radiologists. Radiographers and radiologists play a crucial role in dose optimisation and thus their responsibility and behaviour towards CT protocols will be reviewed.

The session will conclude with a presentation on the American College of Radiology (ACR) Dose Index Registry (DIR), which was conceived in 2004 and launched in 2011 to address the uncertainty of doses in various imaging examinations. It is designed to assist practices and institutions in comparing dose indices with national values. The DIR has over 1,600 participating institutions, both domestically and internationally, and over 33 million exams are currently in the DIR.

Dr. Emanuele Neri from Pisa, Italy, is chair of the EuroSafe Imaging subgroup on European CT Dose Repository.

EuroSafe Imaging Session

Friday, March 3, 14:00–15:30, Room M 1

EU 4 European CT dose repository

Moderators: J.A. Brink; Boston, MA/US
J. Damilakis; Iraklion/GR

- **The technical implementation of dose tracking tools**
  A. Torresin; Milan/IT
- **How do dose tracking tools change the practice of radiographers?**
  S.J. Foley; Dublin/IE
- **How do dose tracking tools change the practice of radiologists?**
  F. Zanca; Leuven/BE
- **European CT Dose repository working group: summary of activities**
  E. Neri; Pisa/IT
- **The ACR Dose Index Registry**
  R.L. Morin; Jacksonville, FL/US
- **Questions and answers**

This session is part of the EuroSafe Imaging campaign.

BY RAYMOND OYEN

ESUR takes stock of strengths, threats and opportunities

Although the European Society of Urogenital Radiology (ESUR) is rather small in numbers, it is great in achievements. Indeed, ESUR has built a tradition of organising high-level symposia and workshops, as well as participation in international meetings. It also produces numerous papers for highly ranked journals. These activities largely contribute to the visibility of ESUR and urogenital radiology. This success is due to the initiative of the subcommittees and working groups and the inspiring enthusiasm of local organisers of annual symposia and workshops. A friendly and familiar atmosphere has become a typical characteristic of ESUR meetings.

The Society is particularly proud that ESUR members will become Presidents of the European Society of Radiology (ESR): Bernd Hamm from Berlin (2017/18) and Lorenzo Derchi from Genoa (2018/19). Many other ESUR members are involved in the ESR at an institutional level.

Strengths: visibility and scientific output

The 23rd ESUR Annual Symposium (chair: Nicolas Grenier) took place in Bordeaux in 2016 and was very successful from all points of view.

Early in 2016, ESUR members participated in a satellite symposium on the state-of-the-art practice of urogenital imaging in Muscat, hosted by the Oman Radiology and Molecular Imaging Society (ORMIS), which was attended by an enthusiastic audience of predominately young radiologists and clinicians.

From the early days of the Contrast Media Safety Committee (CMSC), ESUR has taken the lead in producing guidelines on the safe use of contrast media (version 9.0), in collaboration with the main companies. The guidelines are widely accepted, translated into several languages, and locally adapted by many national societies. Recent meetings include a session during the International Congress of Radiology in Buenos Aires, September 2016 (H. Thomson) and a workshop in Jakarta, Indonesia in November 2016 (S. Morcos). In early 2017, a workshop will be held in Peru with the contribution of G. Heinz-Peer. Twenty eight countries have participated so far in the ESUR Global Educational Programme on Safe Use of Contrast Media.

The workshop on multiparametric prostate MRI (mpMRI) in June 2016 (Berlin; B. Hamm) attracted a large audience of mainly young radiologists. This proves that there is awareness within the community of general radiologists that mpMRI is rapidly evolving and continuous education is required to improve competence in performing high-quality mpMRI examinations and to improve reporting based on the PI-RADS vs. 2 classification. This PI-RADS vs. 2 is the result of a joint effort by the American College of Radiology (ACR), ESUR, and the AdMetech Foundation, and is based on the ESUR guidelines on prostate MR by the Prostate Imaging Working Group (Eur Radiol 2012;22:746-757). This acceptance by the urological community has been confirmed with the publication in *European Urology* (Eur Urol 2016;69(1):16-40). In June 2017, the workshop on mpMRI will be held in Copenhagen (V. Logager), building on the wave of enthusiasm of previous meetings. The 2018 workshop is most likely to be held in Lille, France (P. Puech).

In November 2016, Michele Bertolotto organised a workshop on the multimodality imaging approach to penile and scrotal pathologies (Florence). The ESUR Working Group on Scrotal and Penile Imaging (chair: J. Richenberg) is extremely productive with recent publications on guidelines for testicular microlithiasis (Eur Radiol 2015;25(2):323-330), and on incidental testicular lesions/tumours (Eur Radiol 2016;26(7):2268-2278).

A paper on guidelines for pelvic endometriosis has been published in *European Radiology* on the initiative of the Female Pelvis Imaging Working Group (Eur Radiol 2016 ESUR guidelines: MR imaging of pelvic endometriosis).

The Paediatric Imaging Working Group published imaging recommendations on specific topics in the recent past (M. Riccabona; on behalf of the ESPR Uroradiology Taskforce. Pediatr Radiol 2015;45(13)2023-2028).

ESUR is looking forward to its 24th annual symposium in 2017, September 14–17, in Gdansk, Poland, hosted by M. Studniarek and the 2018 ESUR symposium in Barcelona hosted by C. Nicolau.

ESUR: Strengths, visibility and scientific output in collaboration with other societies

The active involvement of ESUR in the ESR and ECR guarantees input from experts in urogenital imaging in future policies and further improvement on the scientific level.

It is of mutual interest to members of the American Society of Abdominal and Urogenital Radiology (SAR) and ESUR to contribute to their respective symposia. The perspective of urogenital imaging on both sides of the ocean is widening, albeit at times from slightly different angles, but always aimed at improving radiologists' competences and patient care. M-F. Bellin presented the honorary ESUR Lecture on 'New paradigms in renal tumour imaging' at the 2016 SAR Annual Meeting in Hawaii (contributions by J. Barentsz, J. Futterer, and G. Masselli). Likewise, there is strong collaboration with the Asian Society of Abdominal Radiology (ASAR) through exchanging contributions to the annual meetings. The collaboration with both SAR and ASAR must be strengthened to enhance the visibility of the subspecialty of urogenital imaging and ESUR in particular.

The cooperation with the European Society of Gastrointestinal and Abdominal Imaging (ESGAR) has been further formalised with bilateral active participation. This widens the range of topics for general radiologists offered at the respective meetings. A joint paper on recommendations for MRI of pelvic floor dysfunction has been accepted by *European Radiology* (R.E. El