SOCIETÀ ITALIANA di RADIOLOGIA MEDICA
ITALIAN SOCIETY OF MEDICAL RADIOLOGY

SIRM Documents 2010-2012

SELECTION
of
CONTRAST AGENTS

Opinion of the Italian Society of Forensic and Insurance Medicine (SIMLA)

Document approved by the SIRM Executive Committee on 19-20 November 2010

FOREWORD

In April 2010, following a verbal agreement between Prof. P. Ricci of the Italian Society of Forensic and Insurance Medicine (SIMLA) and Prof. Tamburrini of SIRM, SIMLA was asked for an opinion about the rights and duties of radiologists, including civil and criminal liability profiles, with regard to the "selection of contrast agents".

SIMLA took up our request, on the grounds of a solid and well-established scientific and intersociety cooperation, and it formally set up a special working group composed of Prof. P. Ricci (Catanzaro), C. Buccelli (Naples) and F. De Ferrari (Brescia).

This document, developed by legal medicine specialists on the basis of their specific knowledge and carefully evaluated by the SIRM Executive Committee and the Chairman of the SIRM Section on Contrast Agents, Prof. V. David, was formally approved by the SIMLA Executive Committee in July, transmitted to our Secretariat and officially presented by SIMLA President, Prof. Arbarello, during the Montecatini "Giornate Radiologiche" in 2011.

SIRM President
Prof. Antonio Rotondo

Following SIRM's request for an independent medicolegal opinion on the rights and duties of radiologists regarding the selection of contrast agents, the SIMLA Executive Committee delegated Prof. Pietrantonio Ricci, Chair of Legal Medicine at Magna Graecia University in Catanzaro, Prof. Claudio Buccelli, Chair of Legal Medicine at Federico II University in Naples, and Prof. Francesco De Ferrari, Chair of Legal Medicine at the University of Brescia to comply with the request and submit the opinion to the Executive Committee for approval.

Before specifically addressing the topic, the regulatory and ethical background should be recalled.

1. Legislative Decree of 24 April 2006, n. 219

"Implementation of Regulation 2001/83/EC (and subsequent amendment directives) concerning a Community code relating to medicinal products for human use, as well as of Regulation 2003/94/EC" published in the *Official Journal* n. 142 of 21 June 2006 – Ordinary Supplement n. 153 as amended by Legislative Decree of 29 December 2007, n. 274 "Amendments to Legislative Decree of 24 April 2006, n. 219, implementing Directive 2001/83/EC on a Community code relating to medicinal products for human use".

TITLE I

DEFINITIONS

Art. 1.

Definitions

1. For the purposes of this Decree, the following terms shall bear the following meanings:

a) medicinal product or medicine, hereinafter referred to as *"**medicinal product**":*

1) any substance or combination of substances presented as having properties for treating or preventing disease in human beings;

2) *any substance or combination of substances which may be used in or administered to human beings either with a view to restoring, correcting or modifying physiological functions by exerting a pharmacological, immunological or metabolic action, or to making a medical diagnosis*.

Comment

From a regulatory viewpoint there is no doubt that contrast agents are medicinal products/drugs for all intents and purposes, even though they have some unique features which, in many respects, differentiate them from other pharmacological preparations.

Intravascular contrast agents are medications injected at high dosages (grams

versus milli- or micro-grams), often at extremely high speed using currently available technologies (e.g., MDCT), almost always at high concentrations, and their purpose is not to produce pharmacological effects.
It should be noted that none of the contrast agents may be sold in Italy without marketing authorization from the Italian Medicines Agency (AIFA) or, in the case of medicines centrally authorized throughout Europe, without Community approval as per EU Regulation n. 726/2004. Furthermore, any change to the marketing authorization dossier concerning administrative aspects, prescription profile or changes in the production process is subject to the authorization of AIFA or, in the second case, of the European Medicines Agency (EMEA).

2. MEDICAL CODE OF ETHICS (2006)
CHAPTER IV
Diagnostic tests and therapeutic treatment
Art. 13
- Prescription and therapeutic treatment -
Prescription of a diagnostic test and/or treatment implies direct professional and ethical responsibility of the physician, and must be supported by a substantiated diagnosis or, at least, by a well-grounded diagnostic suspicion.

Comment

Based on this ethical assumption, the ***physician***, *and consequently also the radiologist,* ***has full autonomy in the planning, selection and application of any diagnostic and therapeutic drug or device***, even on an in-hospital basis, notwithstanding the patient's right to refuse them and take on the responsibility for this refusal.
Prescriptions and treatments must be based on up-to-date and evidence-based scientific knowledge, taking into account the appropriate use of resources, and pursuing the patient's benefit according to criteria of equity.

In addition, considering that:

A. as medicinal products, contrast agents play a well-defined role provided they fulfil at least **three requirements**:

1. **effectiveness**: in selecting the appropriate contrast agent, the concentration, viscosity and osmolality are particularly important for optimal diagnostic results;
2. **safety**: adverse renal or non-renal reactions may occur; there is a

variability in the safety profile of the different contrast media;

3. **appropriateness**: thorough knowledge of the chemical, physical, pharmacokinetic and clinical application properties of the contrast agent is essential to obtain the best diagnostic result for each patient.

B. contrast agent molecules, despite having all the same primary purpose, are not necessarily all operationally completely equivalent:

1. the various molecules do not have identical effects on microcirculation, on capillary permeability and hemodynamics of compartment distribution, with further differences depending on the organ or region being studied;

2. these substantially different effects may suggest the preferential use of one molecule over another, depending on the individual clinical case.

To conclude:

- the specific use and selection of each medicinal product (= contrast agent), the assessment of its indication and dose, fall entirely under the remit of the physician, in this case the radiologist, who must not be restrained or influenced in his specific professional prerogatves by any administrative or procedural concern; in fact, contrast agents have different physical and chemical properties, which affect their interaction with the human body;

- as a consequence, the decision to deprive the radiologist of the right to use the contrast agent which he or she believes to be best suited to each individual patient does not appear to be justified, nor does the suggestion to acquire “one” commercially available contrast agent without a precise indication, on the part of the physician, of the molecule to be used, even if the choice is supported by a clear and detailed explanation;

- radiologists must be free to choose the most appropriate diagnostic method for each individual patient on the basis of the clinical question and, if necessary, to select the contrast agent which their personal experience, scientific data, and the patient’s clinical condition suggest, even in view of the personal direct liability that ensues in case of

potential mishaps resulting from administration of a contrast agent.

The statement that the radiologist has a right to select a contrast agent implies that the specialist also has a duty to continuously keep his knowledge up to date regarding the physical, chemical, pharmacokinetic and clinical application properties of the different contrast agents, so as to obtain the best diagnostic results.

It is important to emphasize that civil and criminal liability may be potentially imputed to the healthcare facility – which is bound to the patient by a “healthcare contract” - whenever acquisition and therefore procurement of a contrast agent (= medicinal product) is based only on economic considerations following the “lowest-price criterion”, without taking into due consideration the specifications reported in the technical documentation.
Briefly, the “lowest-price criterion” may only apply after the radiologist has carefully established that the contrast agent is absolutely suitable for clinical use, and provided that adequate documentation exists on the complete equivalence in terms of quality and effectiveness among of all products available on the market.
The radiologist has a duty to contribute to containing costs, but his foremost priority is to safeguard the patient’s health.
It remains the power and duty of the radiologist to inform the patient of the possibility of using a different, more suitable, contrast agent from the one provided by the healthcare facility, and that the difference in cost will be charged to the patient.

Prof. Claudio Buccelli
(Naples)

Prof. Francesco De Ferrari
(Brescia)

Prof. Pietrantonio Ricci
(Catanzaro)

SIMLA President
Prof. Paolo Arbarello
(Rome)

Stampa Arte.n - Naples - 081.400136