



**OBJN**  
Online Brazilian Journal of Nursing

**ENGLISH**

Federal Fluminense University

**AURORA DE AFONSO COSTA**  
NURSING SCHOOL



**uff**  
Summary of theses  
and dissertations



## Safety of the elderly patient in cardiac computerized tomography: a descriptive study

Laura Vargas Acauan<sup>1</sup>, Maria Cristina Soares Rodrigues<sup>1</sup>

<sup>1</sup>University of Brasilia

### ABSTRACT

**Introduction:** The elderly population presents a high incidence of coronary artery disease. This dissertation places an emphasis on care for the elderly who undergoes high diagnostic accuracy imaging exams, involving the administration of radiopharmaceutical treatment.

**Aim:** To analyze the actions of health professionals in terms of the safety of elderly patients receiving intravenous iodinated contrast media in the realization of cardiac Computerized Tomography.

**Method:** This is a descriptive study in which a qualitative approach was used. It was performed in the Centers for Diagnostic Imaging in two hospitals in Brasilia, Federal District, Brazil. Twenty six health professionals were involved in a semi-structured interview, and these statements were submitted to Bardin's content analysis method. **Results:** teams predominantly employ female staff whose training time has been between one and ten years. The teams are composed of young adults and middle aged staff with five years' experience or more in this sector. Five categories have emerged from the thematic analysis of the interviews.

**Conclusion:** the teams engage in safe actions. However, their performance must be improved.

**Descriptors:** Patient Safety; Elderly; Diagnostic Imaging; Contrast Media, Qualitative Research.

## INTRODUCTION

Patient safety is a critical aspect of health care in the health service, and their determinants and constraints are linked to actions associated with assistance. Currently, a new approach involving a rethinking in terms of care processes, tries to anticipate the occurrence of errors before they cause harm to the patient<sup>(1)</sup>. The elderly, the fastest growing part of the population in Brazil and worldwide, become more susceptible to chronic diseases with aging. In this sense, the simultaneous use of multiple medications is the rule rather than the exception, which predisposes the elderly to drug interactions. Therefore, they are particularly vulnerable to the occurrence of events and adverse reactions during their care<sup>(2)</sup>. With technological developments in the area of imaging, cardiac Computerized Tomography-angiography has been proposed as a noninvasive method for the diagnosis of coronary artery disease, a chronic disease with a high incidence among the elderly. The intravenous injection of an iodinated contrast agent (radio-pharmaceutical) is a key feature of this process. This drug has a high iodine concentration and the ability to provide a positive contrast, facilitating the detection of cardiovascular diseases. However, adverse reactions may occur with its use, especially in the elderly, who presents risk factors inherent to the aging process<sup>(3)</sup>, which may compromise their safety in terms of the imaging diagnosis procedure.

## AIMS

The aim of this research is to analyze the actions of health professionals with regard to the safety of elderly patients receiving intravenous iodinated contrast media in the realization of cardiac CT. Specific objectives are to character-

ize the health team who work at the Imaging Diagnosis Centers, to verify the existence of safety criteria adopted by the health staff in the implementation of cardiac CT, to know the type of iodinated contrast media used in the performance of cardiac computed CT, its storage, preparation and administration, and to ascertain the procedures adopted in the event of adverse reactions in the administration of contrast media.

## METHOD

This is a descriptive study, in which a qualitative approach was used, performed between June and August 2012. The scenarios were the Imaging Diagnosis Centers in two hospitals in Brasília, Federal District, Brazil. The study included 26 health professionals who took part a semi-structured interview involving eight questions. The characterization of the health teams was demonstrated by means of a descriptive analysis and the testimonies were analyzed through Bardin's content analysis method<sup>(4)</sup>, as part of a thematic analysis. In terms of the ethical principles, the project was approved by the Ethics and Research Committee of the School of Health at the University of Brasilia, number 006/12.

## RESULTS

The team professionals who were interviewed were predominantly female. Their years of training time ranged between one and ten years. They were aged between 21 and 40 years, with five years experience or more at the Imaging Diagnosis Center. The teams were made up of nurses, nursing technicians, radiologists, radiology technicians and technologists. From

Acauan LV, Rodrigues MCS. Safety of the elderly patient in cardiac computerized tomography: a descriptive study. *Online braz j nurs* [Internet]. 2013 Oct [cited year month day]; 12 Suppl: 599-601. Available from: <http://www.objnursing.uff.br/index.php/nursing/article/view/4381>

the content analysis, five categories emerged: 1) Physical safety of the elderly for the performance of cardiac CT; 2) Conceptions and performance of the healthcare team of the Imaging Diagnosis Center with regard to the safety of the elderly; 3) Strategies for the safety of the elderly in the Imaging Diagnosis Center: the use of technology for the realization of the cardiac CT; 4) adverse effects on the performance of cardiac CT: the promotion of the safety of the elderly; 5) the administration of iodinated contrast media and the safety of the elderly in the performance of cardiac computed CT.

## CONCLUSION

Health teams engage in safe actions in the execution of cardiac CT-angiography. However, despite all efforts, it is difficult to predict whether or not elderly patients will present adverse reactions to iodinated contrast media. In the Imaging Diagnosis Centers analyzed, it is clear that teams are alert to the risk factors present in the elderly, and act to minimize the occurrence of adverse reactions. However, the way in which they operate should be improved.

## REFERENCES

1. Quadrante ACR. Portal do envelhecimento [homepage on the internet]. Doenças crônicas e o envelhecimento. [Cited 2012 dec 22]. Available from: <http://www.portaldoenvelhecimento.org.br/acervo/artieop/Geral/artigo250.htm>
2. Vincent C. Segurança do paciente: orientação para evitar eventos adversos. São Caetano do Sul: Yendis; 2009.
3. Silva LS. Avaliação da tomografia computadorizada com 64 colunas de detectores em pacientes com síndrome coronária aguda [Tese]. São Paulo: Faculdade de Medicina da USP; 2011.
4. Bardin L. Análise de Conteúdo. São Paulo: Edições 70; 2011.

---

**Advisor:** Maria Cristina Soares Rodrigues. PhD in Health Sciences, Associate professor of the Postgraduate Program in Nursing at the University of Brasilia. Brasília, FD, Brazil.

**Bibliographic Reference:** Acauan LV. O Idoso no Centro de Diagnóstico por Imagem: segurança na realização da tomografia computadorizada cardíaca. Brasília (DF). Dissertação [Mestrado em Enfermagem]-Faculdade de Ciências da Saúde da UnB; 2013.

**Exam date:** April 23, 2013. School of Health Sciences, University of Brasília. Brasília, Federal District, Brazil.

**Examiners:** Prof.<sup>a</sup> Dr.<sup>a</sup> Maria Cristina Soares Rodrigues, Prof.<sup>a</sup> Dr.<sup>a</sup> Margô Gomes de Oliveira Karnikowski, Prof. Dr. Elioenai Dornelles Alves, prof.<sup>a</sup> Dr.<sup>a</sup> Keila Cristianne Trindade da Cruz.

---

**Received:** 16/05/2013

**Revised:** 07/06/2013

**Approved:** 09/06/2013