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**BOOK OF
ABSTRACTS**

SEVENTH
INTERNATIONAL
CONFERENCE
ON RADIATION
IN VARIOUS FIELDS
OF RESEARCH

June 10-14, 2019
Herceg Novi
Montenegro



Evaluation of radiation dose at optimized protocols for some standard MDCT examinations in a large university hospital

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Purpose. The goal of the research is to define the optimal examination protocol by multislice CT in diagnostics of certain body regions as well as to determine radiation doses and risks for patients both before and after protocol optimization.

Methods. This prospective study comprised 396 adult patients divided into groups according to body regions which have been scanned: I-unenhanced head CT, II-contrast enhanced head CT, III-chest CT, IV-abdominal and pelvic CT. In separate prospective studies groups for dose optimization have also been CT urography (40 patients) and sinus CT (50 patients). All studies have been conducted in two phases: in the first phase standard protocol for the scanned body region has been applied, and in the second phase CT examinations have been carried out according to the modified protocol (by changes of the exposure parameters such as mAs values, and in CT urography group tube voltage as well), with minimum requirements regarding the image quality.

Results. The results have shown that by optimal protocol selection in the sense of exposition parameters, it is possible to reduce significantly radiation dose regarding CTDI_{vol} at unenhanced head CT examination for 7.5%, at contrast enhanced head CT examination for 7%, at chest CT examination for 40%, at abdominal and pelvic CT examination for 25%, at sinus CT examination for 52% and CT urography for 45%.

Conclusion. By selection of protocol in the sense of exposition parameters it is possible to reduce radiation dose significantly along with preserving image quality which is sufficient for adequate radiological image interpretation.



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