(5) CT dosimetric calculator

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Abstract–Recently, X-ray CT (Computed Tomography) is very popular as helpful diagnostics. But its high exposure dose as compared with simple roentgenography should be assessed on a clinical basis as an input to the justification and the optimization. The number of CT scanners in Japan, about 13,000, has been acknowledged to be the largest over the world, as published in the reports from the OECD (Organization for Economic Co-operation and Development) in 2014. And the number of CT scanners per million populations is about 92; this is by far the largest. On the other hand, the number of CT scanners in America is the second largest and is comparable with Japan, but it per million populations is about 32. In Japan, these situations promote the dose assessment of clinical patients for justification and optimization. WAZA-ARI is the web-based open system for CT dose calculator, which has been developed by National Institute of Radiological Sciences (NIRS) and Oita University of Nursing and Health Sciences and the Japan Atomic Energy Agency (JAEA). In WAZA-ARI version 2 (WAZA-ARIv2, https://waza-ari.nirs.qst.go.jp/), can provide organ doses taking into consideration of the body type of patient using Japanese voxel phantoms developed by JAEA. And it can provide exposure dose of children using child voxel phantom developed by the university of Florida. In this system selectable CT scanners are 31 models. Number of these models account for 60% of number of CT scanner installed in Japan. We make efforts to continue increase of CT models. Furthermore, we added the database function of storing the calculation results in each facility in order to check the exposure levels of the CT examination in each medical facility in Japan. At January 2015, WAZA-ARIv2 system started, and currently over one thousand users are registered. In order to acquire more data on the actual situation of medical exposure in Japan, we plan to expand the number of users and improve functions of WAZA-ARIv2 system.