

Purpose: Average glandular dose (AGD) evaluation has EUREF protocol other than ACR protocol. There exists the report about the dose estimate program by ACR protocol, but there is not report regarding the dose estimate program of the EUREF protocol. Moreover, there is PCXMC in the patient dose estimation software of a general radiography, fluoroscopy, and angiography. However, the patient dose cannot be estimated with PCXMC with mammography. The program by the EUREF protocol was constructed by using the measurement data.

Materials and Methods: The basic data used 80(6 manufacturers and 22 models) mammography of the Chubu Region in Japan. The data of the half value layer to calculate the AGD used non-invasive X-ray analyzer. The output was measured by the EUREF protocol. Dosimetry was used with an ionization chamber dosimeter (model 9015) and an ionization chamber (parallel plate type 6.0 cc) both made by Radcal. Software used Visual Basic Ver6.0 of Microsoft. The dose estimation program made “mode that inputs irradiance condition and age” and “mode that inputs measurements”. The dose of 10 various machines not included in the basic data was calculated by using the dose estimation program made to confirm the error margin, and it compared it with measurements.

Conclusions: The program that handily calculated the AGD and the entrance surface dose by inputting the irradiance condition and the age was developed. The estimated error was about 20 %.

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