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The Study of Mean Glandular Dose in Mammography in Yazd and the Factors Affecting It

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Abstract:

Backgrounds/Objective: The objective of this study was to determine the mean glandular dose (MGD) resulting from mammography examinations in Yazd, southeastern Iran and to identify the factors affecting it. **Patients and Methods:** This survey was conducted during May to December 2005 to estimate the MGD for women undergoing mammography and to report the distribution of dose, compressed breast thickness, glandular tissue content, and mammography technique used. The clinical data were collected from 946 mammograms taken from 246 women who were referred to four mammography centers. The mammography instruments in these centers were four modern units with a molybdenum anode and either molybdenum or rhodium filter. The exposure conditions of each mammogram were recorded. The breast glandular content of each mammogram was estimated by a radiologist. The MGD was calculated based on measuring the normalized entrance skin dose (ESD) in air, Half Value Layer (HVL), kVp, mAs, breast thickness and glandular content. HVL, kVp and ESD were measured by a solid-state detector. The analytical method of Sobol et al. was used for calculation of MGD. **Results:** The mean±SD MGD per film was 1.2 ± 0.6 mGy for craniocaudal and 1.63 ± 0.9 mGy for mediolateral oblique views. The mean±SD MGD per woman was 5.57 ± 3.1 mGy. A positive correlation was found between the beam HVL with MGD ($r=0.38$) and the breast thickness with MGD ($r=0.5$). **Conclusion:** The mean±SD MGD per film of 1.42 ± 0.8 mGy in present study was lower than most of similar reports. However, the mean MGD per woman was higher than that in other studies.

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