

Interpretation time for digital breast tomosynthesis versus digital mammography in a population-based screening program

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Purpose: To compare interpretation time for initial and consensus reading using digital breast tomosynthesis (DBT) versus digital mammography (DM) in the Norwegian Breast Cancer Screening Program.

Methods and Materials: As part of a randomized controlled trial performed in Bergen, interpretation time was registered at initial reading and consensus for DM (n=3694 and 242, respectively) and DBT (n=3765 and 227, respectively), January-June 2016. Mean time was calculated, while t-test with a 95% confidence interval (CI) was used to test for statistical significance between the two means.

Results: Mean initial interpretation time was 38 seconds (95% CI: 37-39) for DM and 01:12 minutes (95% CI: 01:11-01:13) for DBT, $p < 0.01$. Mean interpretation time at consensus was 02:03 minutes (95% CI: 01:54-02:13) for DM and 03:24 (95% CI: 03:07-03:41) for DBT, $p < 0.01$. For DM, mean time for initial reading decreased from 51 seconds in January to 27 seconds in June ($p < 0.01$), while it decreased from 01:56 minutes to 58 seconds ($p < 0.01$) for DBT. For consensus, the time decreased from 03:05 to 01:42 minutes ($p < 0.01$) for DM and from 05:44 to 03:34 ($p < 0.01$) for DBT during the study period.

Conclusion: The mean interpretation time at initial reading at DBT was double that of DM and a longer interpretation time should be expected when reading DBT images, also at consensus. The decreasing interpretation time might be related to the start-up of the randomized trial, indicating that the readers became more familiar with the protocol and reading DBT after six months.