Artificial intelligence in BreastScreen Norway: a retrospective analysis of a cancer-enriched sample including 1254 breast cancer cases

HW Koch, M Larsen, H Bartsch, KD Kurz, S Hofvind

Purpose

To compare results of selected performance measures in mammographic screening for Transpara versus independent double reading by radiologists.

Study design

In this retrospective study, we analyzed data from 949 screen-detected breast cancers, 305 interval cancers, and 13,646 negative examinations performed in BreastScreen Norway during the period from 2010 to 2018. Transpara scored the examinations from 1 to 10, based on the risk of malignancy. Results from Transpara were compared to screening results after independent double reading. A Transpara score of 10 was set as the threshold. The results were stratified by mammographic density.

Results

AI outperforms human double reading in women with highly dense breasts
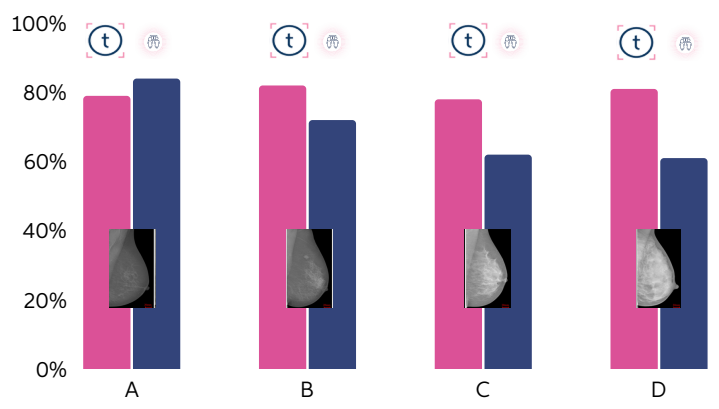
Interval cancers found retrospectively by Transpara
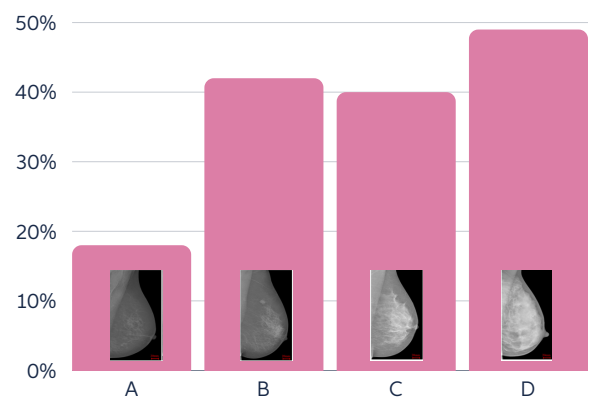
Conclusion

The high proportion of cancers with a Transpara score of 10 indicates the promising performance of Transpara, particularly for women with dense breasts. Results on prior mammograms with a Transpara score of 10 illustrate the potential for earlier detection of breast cancers by using AI in screen-reading.

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