

EP05.83 AI assistance supports inter-physician agreement in identifying abnormal fetal ultrasound findings linked to congenital malformations

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Context

Early diagnosis within the prenatal care pathway and standardization of practices are crucial for improving the prognosis of the pregnancy as the detection rates heavily depend on the interpreting physician's knowledge and familiarity with abnormal findings.

Objectives

Assess the effectiveness of the AI software (FDA-cleared) on reader performance in identifying fetal abnormalities and on reducing inter-reader variability.

Methods

- 750 images, derived from 287 examinations of pregnant women between 11 and 39 weeks of gestation from 37 sites in the USA, 9 sites in Europe, and 1 site in Africa.
- 13 readers from 2 to over 30 years of experience who reviewed each image twice, with and without AI-assistance, 28 days apart to minimize recall bias.

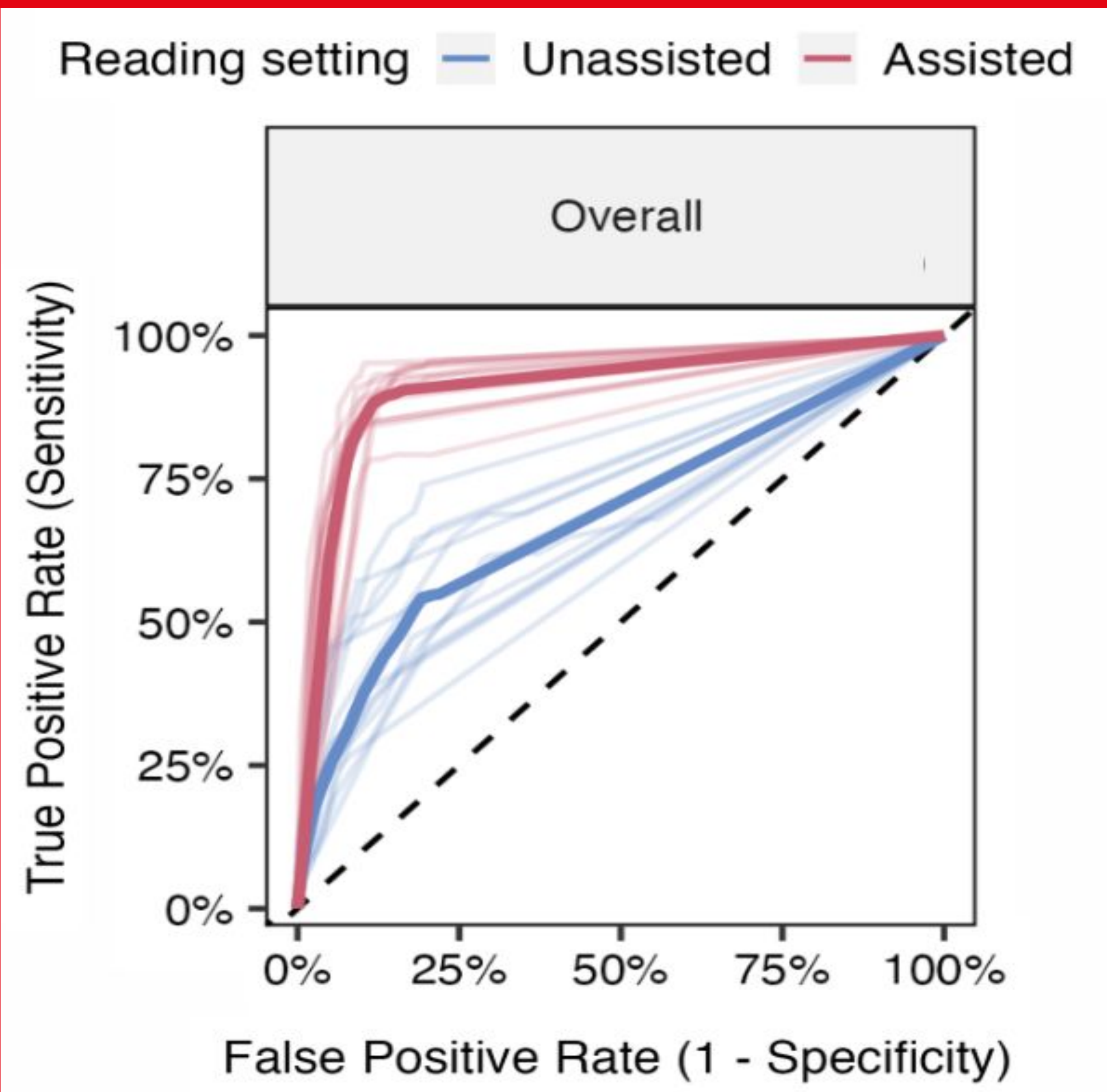


Figure 1. ROC curve for both paradigms

Results

Reader Accuracy

Average AUC

68.9%
reader alone

90.0%
reader + AI

34.3% Average sensitivity increase

7.20% Average specificity increase

Inter-reader Agreement

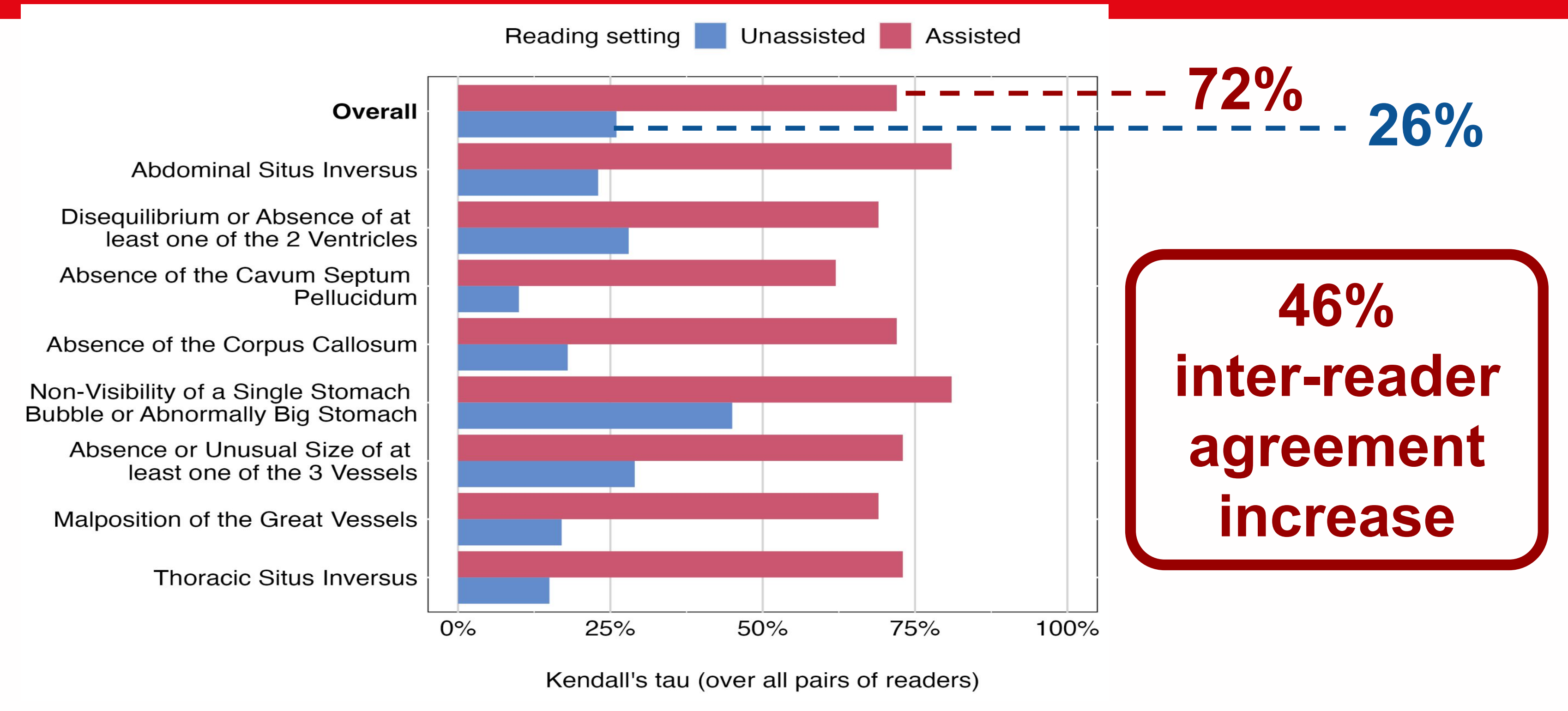


Figure 2. AI software assistance increases inter-reader agreement

Conclusion

The AI software significantly improved reader performance in detecting fetal abnormalities without compromising specificity as well as reduced inter-reader variability.

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