Telaah Sistematis Performa Skrining Automated Breast Ultrasound (ABUS) = Screening Performance of Automated Breast Ultrasound (ABUS): a Systematic Review

Fitri Juniarta, author

Abstrak

Latar belakang: Performa skrining Automated Breast Ultrasound (ABUS) untuk kanker payudara masih belum jelas. Kami melakukan telaah sistematis untuk mendapatkan performa skrining ABUS untuk kanker payudara. Metode: Kami mencari dalam database PubMed, Scopus, ClinicalTrials.gov, dan OpenGrey untuk mengidentifikasi studi yang memenuhi syarat hingga 18 Maret 2021. Studi yang menggunakan ABUS untuk membedakan tumor payudara jinak dan ganas dalam kondisi skrining atau dengan partisipan asimtomatik diinklusi ke dalam telaah sistematis. Telaah sistematis dilakukan untuk mengetahui dua parameter (kisaran untuk rerata sensitivitas dan kisaran untuk rerata spesifisitas) dan prevalensi kanker payudara di populasi. Hasil: Empat penelitian yang melibatkan 4.252 pasien (dengan 126 kanker payudara yang dikonfirmasi secara histopatologis) dimasukkan dalam telaah sistematis performa skrining ABUS. Rerata sensitivitas terendah untuk ABUS adalah 62% (95% confidence interval (CI) 47% – 75%) dan rerata sensitivitas tertinggi 98% (95% CI 87% – 100%). Rerata spesifisitas terendah untuk ABUS adalah 68% (95% CI 55% – 78%), sedangkan rerata spesifisitas tertinggi 100% (95% CI 99% – 100%). Bias publikasi tidak dievaluasi karena jumlah studi yang diikutsertakan sedikit. Prevalensi kanker payudara pada populasi diperkirakan antara 1,25% - 3,59%. Kesimpulan: Mempertimbangkan keunggulan ABUS termasuk non-radioaktivitas, rekonstruksi tiga dimensi, potongan khusus (potongan koronal), dan penghematan waktu, maka ABUS dapat menjadi alat skrining kanker payudara yang potensial terutama pada perempuan berdensitas payudara padat. Perangkat lain yang cukup menjanjikan untuk meningkatkan sensitivitas ABUS seperti sistem kecerdasan buatan/computer-aided system perlu lebih dieksplorasi.
.....Background: The screening performance of an Automated Breast Ultrasound (ABUS) for breast cancer remains unclear. We performed a systematic review to get the screening performance of the ABUS for breast cancer. Methods: We searched PubMed, Scopus, ClinicalTrials.gov, and OpenGrey databases to identify eligible studies up until March 18, 2021. Studies using ABUS for differentiating benign and malignant breast tumors in screening conditions or asymptomatic participants were included. A systematic review was performed to understand two parameters (range of mean sensitivity, range of mean specificity) and prevalence of breast cancers in the populations. Results: Four studies involving 4,252 patients (with 126 histopathologically confirmed breast cancers) were included in the systematic review for screening performance of ABUS. The lowest mean sensitivity for ABUS was 62% (95% confidence interval (CI) 47% – 75%) while the highest mean sensitivity was 98% (95% CI 87% – 100%). The lowest mean specificity for ABUS was 68% (95% CI 55% – 78%), while the highest mean specificity was 100% (95% CI 99% – 100%). The publication bias was not evaluated because of the small number of studies included. The prevalence of breast cancers in the populations was estimated (between 1.25% – 3.59%). Conclusion: Considering ABUS advantages including non-radioactivity, three-dimensional reconstruction, special view (coronal view), and time-saving, ABUS is a potential screening tool for breast cancer especially in dense-breast women. Another promising tool that can increase ABUS sensitivity such as artificial

intelligent/computer-aided system needs to be explored.