Estimasi mean gradular dose (MGD) pada mamografy computed radiografy(CR) = The estimation of Mean Glandular Dose (MGD) on Mammography Computed Radiography (CR)

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Abstrak

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Sampai sekarang mamografi merupakan program skrining utama untuk deteksi dini kanker payudara khususnya untuk kaum wanita, akan tetapi pemberian informasi tentang dosis yang diterima pasien masih jarang dilakukan. Padahal payudara merupakan salah satu organ sensitif terhadap radiasi pengion karena mampu menginduksi kanker. Sehingga perlu dilakukan estimasi dosis pasien pada pemeriksaan mamografi untuk mengetahui nilai dosis yang diterima oleh payudara. Estimasi dosis dilakukan dengan menggunakan perhitungan Mean Glandular Dose (MGD) pada mamografi Computed Radiography (CR). Dengan melakukan koreksi terhadap kualitas citra pada prosentase (%) glandularity, yaitu prosentase (%) glandularity 25-49% dan 1-24%. Nilai prosentase (%) glandularity dievaluasi oleh radiolog. Dari hasil estimasi didapatkan total rerata MGD pada seluruh proyeksi pemeriksaan payudara 1,65 mGy pada rerata ketebalan kompresi 48,85 mm. MGD yang diperoleh masih di bawah limit berdasarkan rekomendasi FDA, ACR dan MQSA yaitu < 3 mGy per eksposi pada ketebalan 45 mm. MGD dipengaruhi oleh kombinasi antara ketebalan kompresi, kV, HVL dan prosentase (%) glandularity.
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ABSTRACT
Currently, mammography is the primary screening program for breast cancer early detection for women, but information about the doses received by patient are still rare. Breast is a sensitive organ to ionizing radiation since it can include cancer. Therefore it is necessary to estimate the patient dose during mammography examinations. Estimated doses calculations were performed using in term of mean glandular dose (MGD) using Mammography Computed Radiography (CR). Image quality correction was done based on the most frequent percentage (%) glandularity from all samples, which are 25-45% and 1-24% glandularity. Percentage (%) glandularity was evaluated by radiologist. Estimated of total average MGD all off projection at the breast examination 1,65 mGy on the mean compression of thickness 48,85 mm. Mean Glandular Dose obtained during measurement are still under recommendation of the FDA, ACR and MSQA which is < 3 mGy per eksposure. From measurement and calculation, the MGD is influenced by compression of thickness, kV, HVL and percentage (%) glandularity.