Ability of prostate specific antigen to predict bone scan result in prostate cancer patients

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Abstrak

Tujuan penelitian ini adalah untuk melihat hubungan antara serum Prostate Specific Antigen (PSA), stadium klinis lokal, grading tumor dengan hasil bone scan dalam usaha mengevaluasi kemampuan serum PSA untuk memprediksi hasil bone scan pada penderita baru kanker prostat. Suatu penelitian retrospektif dilaksanakan terhadap data penderita kanker prostat yang didiagnosis di institusi penulis antara Januari 1995 hingga Desember 2003. Subyek penelitian ditolak apabila nilai PSA diperoleh setelah dilakukan manipulasi uretra atau sesudah penderita mendapatkan terapi. Hubungan antara hasil bone scan dengan serum PSA, stadium klinis lokal dan grading tumor dianalisis. Hasil penelitian menunjukkan dari 103 penderita yang termasuk dalam penelitian ini, 61 penderita (59,2%) mempunyai hasil bone scan positif dengan rerata nilai PSA 471,13 ± 853,34 ng/ml, sedangkan 42 penderita (40,8%) mempunyai hasil bone scan negatif dengan rerata nilai PSA 61,00 ± 124,47 ng/ml (p < 0,05). Resiko untuk mendapatkan hasil bone scan positif bertambah besar dengan meningkatnya nilai PSA, stadium klinis lokal dan grading tumor (p < 0,05). Dengan menggunakan kurva Receiver Operating Characteristic (ROC), terbukti bahwa PSA mempunyai korelasi terbaik dengan hasil bone scan (Area Under Curve = 0,812). Kombinasi serum PSA, stadium klinis lokal dan grading tumor mempunyai kemampuan terbaik dalam memprediksi hasil bone scan. Dari 19 penderita dengan serum PSA < 10 ng/ml, terdapat 5 penderita yang mempunyai hasil bone scan positif; sedangkan dari 8 penderita dengan serum PSA < 10 ng/ml, stadium klinis T1 atau T2 dan grading tumor derajat 1 atau 2, tidak satupun menunjukkan metastasis tulang. Dari penelitian ini dapat disimpulkan bahwa pemeriksaan rutin bone scan tidak diperlukan bagi penderita baru kanker prostat dengan serum PSA < 10 ng/ml, stadium klinis T1 atau 2 dan grading tumor 1 atau 2. (Med J Indones 2004; 13: 151-5)

<hr><i>The objective of this study is to assess the relation between serum Prostate Specific Antigen (PSA), clinical tumor stage, tumor grade and bone scan result in an attempt to seek the ability of serum PSA to predict bone metastases in newly diagnosed prostate cancer patients. A retrospective analysis was conducted on clinical files of prostate cancer patients which were diagnosed in our institutions between January 1995 and December 2003. Patients on which initial serum PSA were obtained after urethral manipulation or after receiving therapy were excluded. The results of bone scans were related to levels of serum PSA, clinical tumor stage and tumor grade. Of 103 patients who were included in this investigation, 61 patients (59.2%) had a positive bone scan and 42 patients (40.8%) had a negative bone scan with mean PSA value 471.13 ± 853.34 ng/ml and 61.00 ± 124.47 ng/ml respectively (p < 0.05). The risk of having a positive bone scan increased with advancing serum PSA levels, clinical tumor stage and tumor grade (p < 0.05). Using Receiver Operating Characteristic curves, PSA had the best correlation with bone scan results (the area under curve was 0.812). Bone scan results were predicted best by the combination of serum PSA, clinical tumor stage and tumor grade. Bone scans were positive in 5 of 19 patients with PSA level < 10 ng/ml. None of 8 patients with PSA levels < 10 ng/ml, clinical tumor stage T1 or 2 and tumor grade 1 or 2 had a positive bone scan. In conclusion, we suggest that routine bone scan examination may not be

necessary in patients with newly diagnosed, untreated prostate cancer, who have serum PSA level < 10 ng/ml with clinical tumor stage T1 or 2 and tumor grade 1 or 2 (Med J Indones 2004; 13: 151-5).</i>