

# Perbedaan Rasio Apparent Diffusion Coefficient Tumor Prostat Terhadap Derajat Keganasan Adenokarsinoma Asinar Prostat Pada Pemeriksaan Magnetic Resonance Imaging 1,5 Tesla Menggunakan Body Coil = Differences Apparent Diffusion Coefficient Ratio in determining the Degree of Adenocarcinoma Acinar Prostate using 1.5 Tesla MRI Prostate Examination with Body Coil

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## Abstrak

**Latar Belakang:** Kanker prostat merupakan keganasan ketiga yang paling sering ditemukan di Indonesia. Sekitar 90-95% kanker prostat adalah adenokarsinoma asinar. Prognosis kanker prostat dan strategi tatalaksana didasarkan pada derajat keganasan. Tujuan penelitian ini untuk evaluasi rasio ADC dalam menentukan agresivitas kanker prostat.

**Metode:** Sebanyak 32 sampel kanker prostat dari zona perifer yang terbukti dengan biopsi dan telah dilakukan pemeriksaan MRI 1,5T dengan *body coil*. Rasio ADC dihitung menggunakan nilai ADC tumor dengan urin di vesika urinaria, otot obturator, dan ramus pubis sebagai referensi. Analisis rasio ADC dengan hasil histopatologi *grade group* 2 dan 3 menggunakan *student t*. Kurva ROC digunakan untuk akurasi diagnostik rasio ADC dalam menentukan *grade group*.

**Hasil:** Terdapat 12 dan 20 sampel *grade group* 2 dan 3. Rasio ADC tumor-urin 0,24, tumor-obturator internus 0,64, dan tumor-ramus pubis 0,85, lebih rendah dan bermakna pada pasien dengan *grade group* 3 ( $p < 0,005$ ). AUC dihitung menggunakan rasio ADC tumor-urin menunjukkan hasil tertinggi (0,988) di antara rasio ADC tumor-obturator internus (0,887) dan tumor-ramus pubis (0,783). **Kesimpulan:** Ketiga rasio ADC berbeda bermakna dalam membedakan *grade group* 2 dan 3, serta merupakan prediktor signifikan dari kanker prostat *grade group* 3.

.....**Background:** Prostate cancer is the third most common malignancy in Indonesia. Approximately 90-95% of prostate cancers are adenocarcinoma acinar. Prostate cancer prognosis and treatment strategies are based on degree of malignancy. Objective of this study was to evaluate the ADC ratio in determining the aggressiveness of prostate cancer.

**Method:** Thirty two prostate cancer samples from peripheral zones were proven by biopsy and 1.5T MRI examination was performed with body coil. ADC ratio was calculated using ADC value of tumor with urine in bladder, obturator muscle, and pubic ramus as a reference. Analysis ADC ratio with *grade group* 2 and 3 using a student T-test. The ROC curve is used for the accuracy of ADC ratio in determining the grade group.

**Results:** Twelve and 20 samples of *grade group* 2 and 3. Three ADC ratio (0.24, 0.64, and 0.85, respectively) lower in *grade group* 3 ( $p < 0.002$ ). AUC was calculated, ratio ADC tumor-urine show the highest results (0.988) among tumor-internal obturator (0.887) and tumor-pubic ramus (0.783).

**Conclusion:** Three ADC ratio have differed significantly in distinguishing grade

group 2 and 3, and were a significant predictor of grade group 3 prostate cancer.