HUBUNGAN NILAI *GLEASON SCORE* DAN *GRADE GROUPS* DENGAN EKSPRESI *FIBROBLAST ACTIVATION PROTEIN* DI STROMA TUMOR PADA ADENOKARSINOMA PROSTAT

TESIS

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PADANG
2023

Hubungan Nilai Gleason *Score* dan *Grade Groups* dengan Ekspresi *Fibroblast Activation Protein* di Stroma Tumor pada Adenokarsinoma Prostat

ABSTRAK

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Latar Belakang: Gleason *score* dan *grade groups* (GrGp) digunakan sebagai nilai prognostik adenokarsinoma prostat. Namun, lingkungan mikro tumor yang didominasi oleh *cancer – associated fibroblast* (CAF) juga memiliki peranan dalam progresivitas perkembangan kanker dan kejadian metastasis. Terdapat heterogenitas CAF berdasarkan sel asalnya, dan 90% dari CAF bisa dideteksi menggunakan biomarka *fibroblast activation protein* (FAP).

Tujuan: Penelitian ini bertujuan untuk mengetahui hubungan nilai Gleason *score* dan GrGp dengan ekspresi FAP sebagai biomarka CAF di stroma tumor pada adenokarsinoma prostat.

Metode: Penelitian ini adalah penelitian observasional dengan pendekatan *cross sectional study*. Dilakukan *review* slide HE dan pulasan IHK dengan antibodi anti-FAP pada 33 sampel blok parafin adenokarsinoma prostat yang berasal dari prostatektomi atau TURP. Hasil pulasan IHK dinilai menggunakan *imunnoreactive score* (IRS) dengan hasil positif dan negatif. Gleason *score* dan GrGp dikelompokkan menjadi *low grade* dan *high grade*. Analisis data dilakukan dengan *Chi-square test* dan nilai p <0,05 dianggap bermakna secara stastistik.

Hasil: Ekspresi FAP positif ditemukan pada 18 kasus (54,5%) dari 33 sampel yang diperiksa, dengan rincian 50% kasus dikelompok *low grade* Gleason *score* dan 54,8% pada *high grade* Gleason *score* (p = 1.000). Pada kelompok *low* GrGp ditemukan 33,3% dan 59,3% pada *high* GrGp (p = 0,375). Secara statistik tidak didapatkan hubungan bermakna antara nilai Gleason *score* dan GrGp dengan ekspresi FAP di stroma tumor adenokarsinoma prostat.

Kesimpulan: Penelitian ini mendapatkan **e**kspresi FAP positif dan negatif pada setiap kelompok Gleason *score* dan GrGp. Hal ini mungkin disebabkan karena adanya heterogenitas dari CAF. Diperlukan penelitian lebih lanjut untuk menilai heterogenitas dari CAF yang berperan dalam adenokarsinoma prostat untuk menggali potensi faktor prognostik dan strategi terapi di masa depan.

Kata kunci: Adenokarsinoma prostat, *cancer – associated fibroblast, fibroblast activation protein*, Gleason *score, grade groups*

Correlation of Gleason Score and Grade Groups with Fibroblast Activation Protein Expression in Tumor Stroma in Prostate Adenocarcinoma

ABSTRACT

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Background: Gleason score and grade groups (GrGp) are used as prognostic values for prostate adenocarcinoma. However, the tumor microenvironment which is dominated by cancer-associated fibroblasts (CAF) also plays a role in the progression of cancer and the incidence of metastasis. There is heterogeneity of CAFs based on their cell of origin, and 90% of CAFs can be detected using the fibroblast activation protein (FAP) biomarker.

Objective: This study aims to determine the relationship between Gleason score and GrGp values with FAP expression as a CAF biomarker in the tumor stroma of prostate adenocarcinoma.

Method: This research is an observational study with a cross sectional study approach. A review of HE slides and IHK smears with anti-FAP antibodies was carried out on 33 paraffin block samples of prostate adenocarcinoma originating from prostatectomy or TURP. The CPI smear results were assessed using the immunoreactive score (IRS) with positive and negative results. Gleason score and GrGp are grouped into low grade and high grade. Data analysis was carried out using the Chi-square test and a p value <0.05 was considered statistically significant.

Results: Positive FAP expression was found in 18 cases (54.5%) of the 33 samples examined, with details of 50% of cases in the low grade Gleason score group and 54.8% in the high grade Gleason score (p = 1,000). In the low GrGp group it was found to be 33.3% and 59.3% in the high GrGp group (p = 0.375). Statistically, there was no significant relationship between the Gleason score and GrGp values and FAP expression in the prostate adenocarcinoma tumor stroma.

Conclusion: This study found positive and negative FAP expression in each Gleason score and GrGp group. This may be due to the heterogeneity of CAF. Further research is needed to assess the heterogeneity of CAFs involved in prostate adenocarcinoma to explore potential prognostic factors and future therapeutic strategies.

Keywords: cancer – associated fibroblast, fibroblast activation protein, Gleason score, grade groups, prostatic adenocarcinoma