

# Analisis ekspresi transporter zink (ZnT-1) sebagai faktor prognosis adenokarsinoma prostat = Expression analysis of zinc transporter (ZnT-1) as prognostic factor of prostate adenocarcinoma

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## Abstrak

[<b>ABSTRAK</b><br>

Pendahuluan: Penurunan kadar Zink (Zn) pada prostat berkorelasi dengan peningkatan skor Gleason adenokarsinoma prostat dan menyebabkan rendahnya Caspase-3 sebagai eksekutor apoptosis. Tingkat ekspresi transporter Zn pada sel tumor prostat berhubungan dengan tingkat keganasannya. ZnT-1 merupakan transporter Zn ke luar sel prostat, sedangkan ZIP-1 merupakan transporter Zn ke dalam sel prostat. Ekspresi ZIP-1 turun pada adenokarsinoma prostat. Korelasi ZnT-1, ZIP-1 dan Caspase-3 diduga berpengaruh dalam karsinogenesis prostat, sehingga berpotensi untuk menjadi faktor prognosis adenokarsinoma prostat. Tujuan: Mempelajari korelasi ekspresi ZnT-1 dan aktivasi Caspase-3 terhadap skor Gleason, menganalisis korelasi ekspresi ZIP-1, ZnT-1 dan aktivasi Caspase-3, serta mengetahui profil ekspresi ZnT-1 pada jaringan adenokarsinoma prostat yang berbeda skor Gleason, dibandingkan dengan jaringan Benign Prostatic Hyperplasia (BPH),

Desain: Studi retrospektif analitik potong lintang. Metode: Sampel penelitian ini adalah 31 blok parafin prostat yang dikelompokkan menjadi BPH, adenokarsinoma prostat skor Gleason 7 dan skor Gleason > 7. Ekspresi ZnT-1 dinilai dengan pulasan imunohistokimia. Data ekspresi ZIP-1 dan Caspase-3 merupakan data sekunder dari penelitian Septiawan et al. Hasil: Ekspresi ZnT-1 berkorelasi dengan skor Gleason adenokarsinoma prostat. Ekspresi ZIP-1 berkorelasi dengan aktivasi Caspase-3 pada adenokarsinoma prostat dan adenokarsinoma prostat skor Gleason 7. Ekspresi ZnT-1 berkorelasi dengan ekspresi ZIP-1 pada adenokarsinoma prostat skor Gleason > 7. Ekspresi ZIP-1 berkorelasi kuat dengan aktivasi Caspase-3 pada adenokarsinoma prostat skor Gleason 8. Ekspresi ZnT-1 pada adenokarsinoma prostat skor Gleason > 7 lebih rendah dibandingkan pada skor Gleason 7, tetapi tidak dapat dianalisis kemaknaan perbedaannya dengan BPH karena hanya diperoleh 1 sampel BPH pada penelitian ini. Kesimpulan: Transporter Zn berpotensi untuk menjadi faktor prognosis adenokarsinoma prostat.

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<b>ABSTRACT</b><br>

Background: Decreased levels of Zinc ( Zn ) in the prostate correlates with an increase in the grade Gleason score of prostate adenocarcinoma and decrease in Caspase-3 as apoptosis executor. Zn transporter expression levels in prostate tumor cells associates with the level of malignancy. The ZnT-1 is Zn exporter, while the ZIP-1 is Zn importer of prostate cells. ZIP-1 expression drops on adenocarcinoma prostate. Correlation ZnT-1, ZIP-1 and Caspase-3 allegedly influential in prostate carcinogenesis and potential to be prognostic factor of prostate adenocarcinoma.

Objective: To analyze the correlation ZnT-1 and Caspase-3 activation of the gleason score, to analyze the correlation of the expression of ZIP-1, ZnT-1 and Caspase-3 activation in adenocarcinoma prostate, and to study the profile expression of ZnT-1 in prostate adenocarcinoma with different grading of Gleason scores, compared with benign prostatic hyperplasia (BPH),

**Design:** A cross-sectional retrospective study analytic . **Methodology:** The sample is 31 paraffin blocks were grouped into BPH, prostate adenocarcinoma Gleason scored 7 and prostate adenocarcinoma Gleason scored > 7. Samples are analyzed expression of ZnT-1 by immunohistochemical staining. ZIP-1 and Caspase-3 expression is secondary data of Septiawan et al's immunohistochemical staining. **Results:** ZnT-1 expression correlated with gleason score. ZIP-1 correlated with the activation of Caspase-3 in prostate adenocarcinoma and prostate adenocarcinoma Gleason score 7. ZnT-1 correlated with ZIP-1 in prostate adenocarcinoma Gleason score > 7. ZnT-1 expression in prostate adenocarcinoma Gleason scored > 7 was lower than prostate adenocarcinoma Gleason score 7, but could not be analyzed the difference significance with BPH because there was only 1 BPH sample in this research. **Conclusion:** Zn transporters have the potential to be a prognostic factor of prostate adenocarcinoma.;**Background:** Decreased levels of Zinc ( Zn ) in the prostate correlates with an increase in the grade Gleason score of prostate adenocarcinoma and decrease in Caspase-3 as apoptosis executor. Zn transporter expression levels in prostate tumor cells associates with the level of malignancy. The ZnT-1 is Zn exporter, while the ZIP-1 is Zn importer of prostate cells. ZIP-1 expression drops on adenocarcinoma prostate. Correlation ZnT-1, ZIP-1 and Caspase-3 allegedly influential in prostate carcinogenesis and potential to be prognostic factor of prostate adenocarcinoma.

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