

## THE EXPRESSION OF TRANSFORMING GROWTH FACTOR BETA-1 AND INTERLEUKIN 6 ON HUMAN PROSTATE; PROSTATE HYPERPLASIA AND PROSTATE CANCER

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### ABSTRACT

**Purpose:** Prostate hyperplasia and prostate cancer are two of the most common pathological condition of prostate to be found on male. Both of these diseases share a common pathogenesis involving inflammation of prostatic tissues. Chronic inflammation will induce the release of cytokines, followed by cell's injury and tissue's damage. One of the cytokines that plays role in prostate pathology is IL-6. The inflammation will also induce the releases of anti-inflammatory cytokines such as TGF- $\beta$ . This study aims to analyze the expression of IL-6 and TGF- $\beta$ 1, in prostate hyperplasia and prostate cancer.

**Material and Methods:** This is an observational study, using paraffin embedded tissue samples of prostate hyperplasia and prostate cancer. Samples were obtained from the laboratory of Pathological Anatomy, Faculty Of Medicine, Andalas University, Padang, Indonesia. Immunohistochemistry was performed to detect the cytokine expression, and a semiquantitative measurement according to Immunoreactive score (IRS) was performed for evaluation. For the TGF- $\beta$ 1, the stromal expression were also analyzed by measurement of stromal stained area. The correlation of cytokine expression to Gleason index score were also analyzed in prostate cancer.

**Results:** This study found that TGF $\beta$ -1 was detected both in stromal component as well as epithelial. With the stromal being dominant site of expression. The stromal TGF $\beta$ -1 expression were of significantly higher in prostate hyperplasia compares to prostate cancer ( $p < 0,05$ ), while the epithelial expression of TGF $\beta$ -1 were not found to be significantly different. IL-6 were mostly expressed intracytoplasmic in epithelial. The IL-6 expression were significantly higher in prostate cancer compared to hyperplasia. However there were no significant correlation to found between IL-6 expression to the Gleason Score among prostate cancers.

**Conclusion:** In summary this study reveals that there were differences in expression of both TGF $\beta$ -1 and IL-6 between prostate hyperplasia and prostate cancer tissue by immunohistochemistry.

**KEYWORDS:** Prostate Hyperplasia, Prostate Cancer, IL-6, Tgf $\beta$ -1, Gleason Index

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### Article History

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