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Cancer Treatment 2020- MicroRNA's signature and it's role in carcinogenesis for biomaker of prostate cancer- Christin Hendriyani Bonnu,Universitas Gadjah Mada, Indonesia

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Abstract:

The usual diagnostic method to diagnostic Prostate cancer is the PSA (prostate specific antigen) method. However this method is considered to be less effective because the interpretation of the value in cancer patients can be the same as in BPH (Benign Prostate Hypertrophy) patients or other prostate infections. One alternative diagnostic method that can be combined with this usual method to reach best result is finding the molecular signature of this cancer. The aim of this study is to determine microRNAs that can use as biomarkers of prostate cancer. The method used in this study is microRNA expression analysis in two prostate cancer tissue samples and two BPH tissue samples using Nanostring nCounter ®, validation by microarray database and molecular docking. The result shows that there are 7 miRNAs with p values close to 1. There are hsa-mir-98-5p, hsa-let-7a-5p, hsa-mir-106b-5p, hsa-mir-1-3p which are upregulated and hsa-mir- 25-3p, hsa-mir-205-5p, hsa-mir-152-3p which are downregulated in prostate cancer. Microarray database analysis proves the dysregulated microRNAs in prostate cancer are hsa-mir-25-3p, hsa-mir-106b-5p, hsa-let-7a-5p and hsa-mir-98-5p. The docking result shows that hsa-mir-25-3p has stronger interaction with E2F1 than hsa-mir-106b-5p. The last analysis from Kaplen Meier also shows that all these miRNAs have influence on patient's survival rate, although it is unsignificantly. Our findings revealed that all these miRNAs have potential to be novel biomarker for prostate cancer patients, especially hsa-mir-25-3p and hsa-mir-106b-5p.

Biography

Christin has completed his bachelor at the age of 22 years from Universitas Nusa Cendana and now studying at Universitas Gadjah Mada in Biotechnology department. This is the first time for her attending an international conference and she has no intenational publication before.

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Prostate disease is the most regularly analyzed non-cutaneous threat in men and is the subsequent driving reason for malignancy passing [1]. It is evaluated that up to one of every six men will be determined to have prostate malignancy during their lifetime [2]. Clinicians utilize a blend of a computerized rectal assessment (DRE) and a prostate explicit antigen (PSA) and a transrectal ultrasound guided prostate biopsy (TRUS) to recognize prostate malignant growth. In any case,

prostate malignant growth screening preliminaries, for example, The Prostate, Lung, Colorectal and Ovarian disease screening preliminary (PLCO) and the European Randomized Study of Screening for Prostate disease (ERSPC) preliminaries, have featured that regardless of an expansion in the conclusion of prostate disease utilizing these tests, there is still no reasonable improvement in mortality [3,4]. Furthermore, PSA, an every now and again utilized biomarker for the location of prostate malignancy, is constrained by its absence of affectability and explicitness for prostate disease and subsequently not considered a perfect biomarker. Therefore, a quest for a novel, negligibly intrusive, clinically pertinent biomarkers for the discovery of prostate malignant growth is required.

mi(cro)RNAs are little non-coding endogenous RNA atoms that differ long from 18–25 nucleotides. There are various dysregulated miRNAs that are ensnared in the pathogenesis of disease and have been appeared to control quality articulation and capacity at the transcriptional and post-transcriptional level. They assume an essential job in the statement of up to 60% of human qualities [5]. miRNAs can be up or down-directed, with up-guideline of oncogenic miRNAs and down-guideline of tumor silencer miRNAs are exhibited in an assortment of malignancies. Dysregulation of miRNA has been related with the pathogenesis of various tumors and roughly up to half of miRNA qualities are situated in malignant growth related genomic locales [6]. Notwithstanding their little size miRNAs are incredibly steady particles and have been recognized and measured in RNA removed from formalin fixed paraffin implanted tissue tests that have been put away for a long time [7]. miRNAs are amazingly steady in the course and are shielded from endogenous ribonuclease (RNase) action and from varieties in pH and temperature [8].

Various investigations have recognized that there are various miRNAs that are dysregulated in prostate malignant growth tissue [9,10,11,12]. All the more as of late, considers have distinguished that dysregulated miRNAs are likewise recognizable in the course of patients with varying malignancies [13,14]. Explicit to prostate disease, Mitchell et al. recognized that epithelial malignancies discharge miRNAs into the flow and that miR-141 could distinguish those patients with metastatic prostate disease from sound controls [8]. Thus, miRNAs can possibly be a novel, stable, non-obtrusive biomarker.

The essential point of this examination was to research if a miRNA mark was discernible that was one of a kind to patients with prostate malignant growth in correlation with patients with considerate prostatic histology going to a prostate appraisal center. Optional points were to evaluate if there is a relationship between's flowing degrees of miRNAs and expanding hazard delineation of prostate malignant growth according to the D'Amico chance definition and furthermore if the miRNA signature came back to ordinary after an extreme prostatectomy

An aggregate of 102 patients were chosen aimlessly and remembered for this examination. Following TRUS biopsy 75 men were consequently determined to have prostate malignant growth (middle age 64 years, middle PSA 7.4 µg/L) and 27 had a kind histological discovering (middle age 65 years, middle PSA 7.45 µg/L). There was no huge contrast between the PSA levels of the benevolent or malignancy gathering, as most patients were alluded with a raised PSA level (see Table 2). Twenty eight patients had Gleason score 6, 34 had Gleason score 7, six had Gleason score 8 and seven patients had Gleason score 9 prostate malignancy. As far as hazard separation, there were 28 men with okay, 11 with middle hazard and 36 with high-chance prostate malignant growth (see Table 3). Inside the kind gathering, men with a determinedly raised PSA experienced a subsequent biopsy. We welcome that there is a high malignancy location rate inside this gathering and there is a high frequency of high evaluation illness which is a reasonable portrayal of the men alluded to our administration.

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