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H19 AND MICRORNA-675 AS POTENTIAL BIOMARKERS FOR PROSTATE CANCER

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Prostate cancer (PCa) is considered the most common malignancy in men globally. Although prostate specific antigen (PSA) is still the only universally utilized biomarker related to prostate cancer, however PSA is not an ideal biomarker and its level can be altered by many factors. The aim of this study is to study serum H19 and miR-675 expression in prostate cancer patients and their potential diagnostic & prognostic significance targeting to find a non-invasive biomarker. This study comprised 25 PCa patients and 25 healthy controls. The expression of serum H19 and miR-675 was detected by real-time polymerase chain reaction while N-Cadherin as an adhesion marker was measured by ELISA (enzyme-linked immunosorbent assay). The expression levels of serum H19 and miR-675 were increased in prostate cancer patients compared with controls. Also serum level of N-cadherin was higher in prostate cancer patients. Upregulation of H19 and miR-675 correlated with PCa metastasis and higher Gleason score. By using the ROC curve, the sensitivity of H19 and miR-675 was higher than PSA for the diagnosis of PCa. The results suggest that H19 and miR-675 expression could be considered potential noninvasive diagnostic and prognostic biomarkers for PCa.

Key words: *Prostate cancer; H19; miRNA-675; N Cadherin; Adhesion; Biomarker.*

H19 ТА мікроРНК-675 ЯК ПОТЕНЦІЙНІ БІОМАРКЕРИ РАКУ ПРОСТАТИ

Рак простати (РП) вважається найпоширенішим злоякісним утворенням серед чоловіків по всьому світу. Хоча простат-специфічний антиген (ПСА) досі є єдиним універсально використовуваним біомаркером, пов’язаним із раком простати, він не є ідеальним, і багато факторів можуть змінювати його рівень. Мета цього дослідження полягала у вивченні експресії H19 та miR-675 у сироватці пацієнтів із раком простати та їхньої потенційної і прогностичної значущості для виявлення неінвазивного біомаркера. Учасниками цього дослідження стали 25 пацієнтів із раком простати та 25 здорових осіб для контролю. Експресію H19 та miR-675 у сироватці виявляли за допомогою ПЛР в реальному часі, а N-кадгерин як маркер адгезії вимірювали за допомогою ІФА (імуноферментного аналізу). Рівні експресії H19 та miR-675 в сироватці були вищими в пацієнтів із раком простати порівняно з контрольною групою. Крім того, рівень N-кадгерину в сироватці був вищим у пацієнтів із раком простати. Підвищена експресія H19 та miR-675 корелювала з метастазами раку простати й вищою оцінкою за шкалою Глісона. Крива ROC продемонструвала, що для діагностики раку простати чутливість H19 та miR-675 була вищою, ніж ПСА. Згідно з отриманими результатами експресію H19 та miR-675 можна вважати потенційним неінвазивним діагностичним та прогностичним біомаркером раку простати.

Ключові слова: рак простати, H19, мікроРНК-675, N-кадгерин, адгезія, біомаркер.

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