Analisis Distribusi Varian Promotor Gen AKNA (rs10817595) dan Ekspresinya Sebagai Salah Satu Faktor Kerentanan Genetik pada Kanker Ovarium Epitelial = Analysis of AKNA (rs10817595) Variant Gene Promoter Distribution and Its Expression As One of Genetic Susceptibility Factor on Epithelial Ovarian Cancer

Miftahuz Zakiyah, author

Abstrak

Kanker ovarium merupakan penyakit ginekologi terbanyak ketiga setelah kanker payudara dan kanker serviks. Kanker ovarium epitelial merupakan tipe paling banyak, dibedakan menjadi low-grade dan high-grade. Faktor kerentanan genetik yang diduga dapat meningkatkan risiko kanker ovarium adalah gen AKNA yang berperan pada respon imun, inflamasi, Epithelial-Mesenchymal Transition (EMT). Penelitian ini bertujuan mengetahui distribusi varian promotor gen AKNA rs10817595 dan ekspresinya tingkat mRNA dan protein pada kanker ovarium epitelial. Sebanyak 63 sampel kanker ovarium dan 65 kontrol digunakan untuk analisis distribusi genotipe dan alel AKNA menggunakan T-ARMS PCR, 35 sampel low-grade, 28 sampel high- grade dianalisis ekspresi mRNA menggunakan qRT-PCR dan dianalisis korelasinya dengan genotipe AKNA. Sebanyak 15 sampel low-grade, 12 sampel high-grade dianalisis level protein AKNA menggunakan imunohistokimia dan dianalisis korelasinya dengan level mRNA AKNA. Hasil penelitian menunjukkan tidak ada perbedaan signifikan frekuensi distribusi genotipe dan alel AKNA, perbedaan signifikan ekspresi mRNA AKNA dan korelasi signifikan ekspresi relatif mRNA AKNA dengan genotipe AKNA, perbedaan signifikan level protein AKNA pada kelompok low-grade, high-grade dibanding kista, tidak ditemukan korelasi signifikan ekspresi relatif mRNA AKNA dengan level protein. Disimpulkan bahwa varian promotor gen AKNA dapat menyebabkan penurunan level mRNA dan protein kelompok low-grade dan high-grade sehingga berpotensi sebagai faktor kerentanan genetik pada kanker ovarium epitelial.
.....Ovarian cancer is the third highest gynecological disease after breast and cervical cancer. Epithelial ovarian cancer is common type, divided into low-grade and high- grade. Genetic susceptibility factor that is thought to increase ovarian cancer risk is AKNA gene which plays a role in immune response, inflammation, Epithelial- Mesenchymal Transition (EMT). This study aims to determine the distribution of AKNA (rs10817595) variant gene promotor, its mRNA and protein level in epithelial ovarian cancer. 63 ovarian cancer and 65 controls were used for genotyping using T- ARMS PCR, 35 low-grade and 28 high-grade samples were analyzed for mRNA levels using qRT-PCR and for correlation with AKNA genotype. 15 low-grade and 12 high- grade samples were analyzed for AKNA protein levels using immunohistochemistry and for correlation with AKNA mRNA levels. The results showed that there was no significant difference in AKNA genotypes and alleles, significant differences in mRNA level and significant correlations between mRNA level with AKNA genotypes, significant differences in AKNA protein levels, and no significant correlation of mRNA with protein levels in low-grade, high-grade compared to cyst. Concluded that AKNA gene promotor variant can cause a decrease in mRNA and protein levels in the low-grade and high-grade, it has the potential as one of genetic susceptibility factor for epithelial ovarian cancer.