

Leukocyte mitochondrial DNA

Epidemiological studies have indicated significant associations of leukocyte mitochondrial DNA (mtDNA) copy number with risk of several malignancies, including glioma.

Patients with high mtDNA content showed both poorer OS and PFS than those with low mtDNA content. Multivariate Cox regression analysis demonstrated that mtDNA content was an independent prognostic factor for both OS and PFS. Stratified analyses showed that high mtDNA content was significantly associated with poor prognosis of patients with younger age, high-grade glioma or adjuvant radiochemotherapy. Immunological analysis indicated that patients with high mtDNA content had significantly lower frequency of natural killer cells in PBMCs and higher plasma concentrations of interleukin-2 and tumour necrosis factor- α , suggesting an immunosuppression-related mechanism involved in mtDNA-mediated prognosis.

The study for the first time demonstrated that leukocyte mtDNA content could serve as an independent prognostic marker and an indicator of immune functions in glioma patients ¹⁾.

¹⁾

Chen Y, Zhang J, Huang X, Zhang J, Zhou X, Hu J, Li G, He S, Xing J. High leukocyte mitochondrial DNA content contributes to poor prognosis in glioma patients through its immunosuppressive effect. Br J Cancer. 2015 Jun 30;113(1):99-106. doi: 10.1038/bjc.2015.184. Epub 2015 May 28. PubMed PMID: 26022928.

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