

Development and validation of a gene expression-based signature to predict distant metastasis in locoregionally advanced nasopharyngeal carcinoma: a retrospective, multicentre, cohort study

With the support by the National Natural Science Foundation of China, the research team directed by Prof. Ma Jun (马骏) at the Sun Yat-sen University Cancer Center, State Key Laboratory of Oncology in South China, Collaborative Innovation Center of Cancer Medicine, recently reported a novel prognostic tool based on 13 genes that improves the ability to predict distant metastasis in patients with locoregionally advanced NPC (LA-NPC). This result was published in *Lancet Oncol* (2018, 19: 382—93).

Gene expression patterns can be used as prognostic biomarkers in various types of cancers. In nasopharyngeal carcinoma, recent evidence also indicates that certain gene-expression patterns might be used as molecular markers that allow early diagnosis and subgroup classification. However, how expression patterns might differ between patients with different clinical outcomes, especially distant metastasis, has not been established.

Ma's team did a multicentre, retrospective study to test the ability of mRNA expression profiles of locoregionally advanced nasopharyngeal carcinoma tumours to predict the risk of distant metastasis at the time of diagnosis. They developed and validated a distant metastasis gene signature for locoregionally advanced nasopharyngeal carcinoma (DMGN) that is based on the expression of 13 genes and can be used as a molecular classifier for distant metastasis. They showed that this signature predicts risk of distant metastasis and which patients are most likely to benefit from concurrent chemotherapy in locoregionally advanced nasopharyngeal carcinoma.

They further developed a nomogram comprising DMGN, N stage, sex, and serum lactate dehydrogenase and C-reactive protein concentrations that predicted distant metastasis-free survival in the training cohort and was validated both internally and externally.

The DMGN is a reliable prognostic tool for distant metastasis in patients with locoregionally advanced nasopharyngeal carcinoma and might be able to predict which patients benefit from concurrent chemotherapy. It has the potential to guide treatment decisions for patients at different risk of distant metastasis.

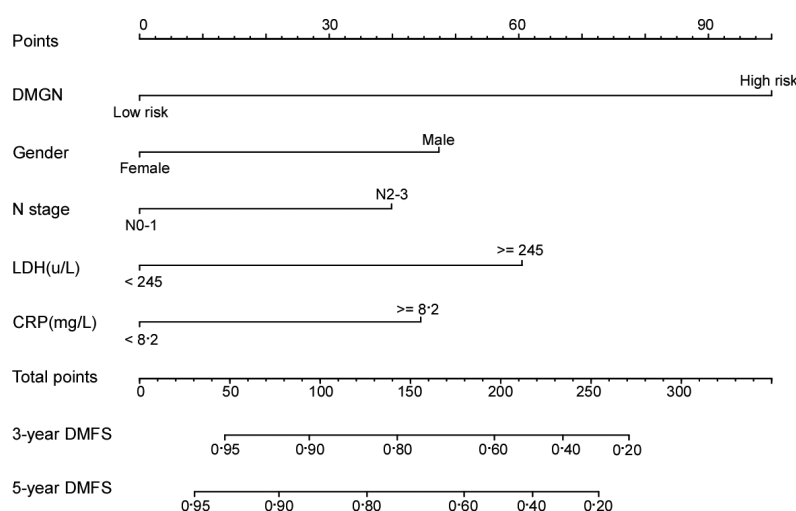


Figure Nomogram A comprising DMGN, N stage, sex, serum LDH and CRP to predict the risk of distant metastasis in locoregionally advanced nasopharyngeal carcinoma.