



Effective Tool for Assessing Prognostic Nutritional and Immunological Indices

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DESCRIPTION

The Prognostic Nutritional Index (PNI) is a simple and inexpensive tool that can assess the nutritional and immunological status of patients with various diseases, especially cancer. The PNI reflects the balance between the host's nutritional reserves and the inflammatory response, which are both important factors affecting the prognosis of cancer patients. Since then, many studies have shown that the PNI is an independent prognostic factor for survival in various types of cancer, such as colorectal cancer, gastric cancer, pancreatic cancer, hepatocellular carcinoma, renal cell carcinoma, lung cancer, breast cancer, ovarian cancer, and esophageal cancer. The PNI can also predict the response to chemotherapy, radiotherapy, immunotherapy, and targeted therapy in cancer patients. However, the PNI is not a static parameter, but rather a dynamic one that can change over time due to various factors, such as tumor progression or regression, treatment effects, complications, infections, and nutritional interventions. Therefore, it is important to monitor the changes of the PNI during the course of treatment and follow-up in order to evaluate the prognosis more accurately and adjust the treatment strategy accordingly.

Several studies have investigated the dynamics of the PNI after curative surgery for cancer and its impact on survival outcomes. For example, the decrease in PNI from preoperative to postoperative status was associated with worse overall survival and disease-free survival in patients with obstructive colorectal cancer who underwent self-expandable metallic colonic stent placement followed by surgery. The increase of postoperative in PNI was associated with better cancer-specific survival and overall survival in patients with renal cell carcinoma who underwent nephrectomy. There are many nutritional indices that have been developed to measure the quality and adequacy of dietary intake in relation to health outcomes. The mechanisms underlying the dynamics of the PNI and its prognostic value are not fully understood, but they may involve several aspects. First, the PNI may reflect the tumor burden and

its influence on the host's metabolism and immune system. A high tumor burden may cause malnutrition, cachexia, anemia, hypoalbuminemia, and lymphopenia, which can lower the PNI. Conversely, a low tumor burden after surgery or effective treatment may improve the nutritional and immunological status of the host and increase the PNI. Second, the PNI may indicate the host's ability to cope with stress and inflammation caused by surgery or other treatments. A high PNI may suggest a better reserve of protein and energy as well as a stronger immune response to prevent or overcome complications, infections, and recurrence. A low PNI may imply a poor reserve of protein and energy as well as a weaker immune response to deal with stress and inflammation, which can lead to adverse outcomes. Third, the PNI may reflect the effect of nutritional interventions on the host's recovery and survival. The difference between PNI and other nutritional indices is that PNI focuses on the nutritional and immunological status of patients with various diseases, especially cancer. PNI is calculated by using only two parameters: serum albumin and total lymphocyte count. PNI reflects the balance between the host's nutritional reserves and inflammatory response. PNI is an independent prognostic factor for survival in various types of cancer and can also predict the response to different treatments.

CONCLUSION

The dynamics of PNI after curative surgery for cancer is a valuable indicator of prognosis that can complement other clinical factors and biomarkers. The PNI can be easily calculated from routine blood tests and should be monitored regularly during treatment and follow-up in order to optimize patient management and improve survival outcomes. Nutritional support may help to maintain or improve the serum albumin level and lymphocyte count, which can increase the PNI and enhance the host's resistance to disease. PNI is not a static parameter but a dynamic one that can change over time due to various factors such as tumor progression or regression, treatment effects, complications, infections, and nutritional interventions.

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