

## Neutrophil-to-lymphocyte ratio (NLR) as a prognostic factor for long-term interleukin-2 (IL-2) use in metastatic renal cell carcinoma

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Because of the introduction of molecular targeted drugs, the treatment of renal cell carcinoma has greatly evolved and patient prognosis has remarkably improved. Molecular targeted drugs are now used for patient therapies instead of cytokines alone. However, treatment of this disease is affected by the drug administration method or when the drug is changed; although sequential therapy with molecular targeted drugs has attracted attention, a clear parameter to judge its effectiveness does not exist. On the other hand, the effectiveness of immunotherapy, which set the transverse axis of the T-cell, can be evaluated by the appearance of anti-PD-1 antibody. In this study, we retrospectively examined three cases of metastatic renal cell carcinoma, which were treated with the long-term use of interleukin-2 (IL-2), with regard to the usefulness of the neutrophil-to-lymphocyte ratio (NLR) as a prognostic factor. All three cases were males; 2 were in their 50s and the other was in his 60s. The cases were administered IL-2 for 2.5, 3 and 7 years, respectively. For all cases, interferon-alpha was administered before IL-2 and after IL-2 administration, all cases were switched to molecular targeted drugs and each case could continue cancer treatment more than 3 years after starting IL-2. And finally, NLR have not raised, less than 2.7 during IL-2 treatment. The results suggested that NLR might serve as a useful marker for therapies when determining prognosis. Further studies including a prospective study in Japan and comparison with large-scale databases will be necessary.

### Biography

Takehiko Okamura has completed his Doctorate in Medical Genetics in 1988. From 1989 to 1991, he was a Research Fellow at the Department of Pathology and Microbiology, University of Nebraska Medical Center, under a famous researcher of bladder carcinogenesis, Dr. Samuel M. Cohen. He studied bladder carcinogenesis and molecular biology. Over the past 30 years, he has continued to conduct clinical and translational research, mainly on BCG immunotherapy for non-muscle invasive bladder cancer. He has published more than 25 papers as a first author.

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