

## Does Bevacizumab Plays a Proper Role in Treating Patients with Non-Small Cell Lung Cancer (NSCLC) ?

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Bevacizumab, as a humanized monoclonal immunoglobulin G (IgG) antibody, inhibits all active isoforms of VEGF, which has been bringing many clinical advantages to the treatment of NSCLC. Although worldwide clinical trials has provided promising findings on the efficacy of bevacizumab in treating the NSCLC either in combination or in single use, several perspectives should be further discussed and emphasized.

Firstly, two clinical trials revealed that the addition of bevacizumab would increase the overall incidence of grade $\geq$ 3 adverse events [1,2], and the incidence of some severe condition such as hypertension and hemorrhage were especially greater in those aged 75 years or above ( $P<0.05$ ). What exact medication should bevacizumab to combine with to reduce the adverse events? Thus, further studies ought to focus on the incidence of adverse events especially in elderly patients, and validate the possible mechanism in order to extenuate it during clinical practice.

Secondly, the drug tolerability of the elderly remains controversy. According to a recent study, [3] the poor compliance and toxicity of elderly patients whose age are up to 70 years are validated, which indicates that elderly patients with NSCLC may have treatment disadvantages comparing to younger counterparts. The results show that elderly patients were less likely to receive bevacizumab (7.5% vs. 21.3%), comparing with the non-elderly group. Also, two clinical trials reveals that the addition of bevacizumab will increase the overall incidence of grade $\geq$ 3 adverse events, and the incidence of some severe condition such as hypertension and hemorrhage are especially greater in those aged 75 years or above ( $P<0.05$ ) [1,2]. Consequently, the dosage and eligibility criteria should be adjusted to fit the elderly patients' condition.

Thirdly, The cost-effectiveness is also an essential component for economic evaluation in the future clinical practice, due to the fact that recent clinical NSCLC guidelines were based on no cost-effective strategies. According to a research conducted by Gayathri Kumar et al. [4], bevacizumab combination group (bevacizumab, carboplatin, paclitaxel) is in the list of most expensive medication regimen in US. In the study, this combination accounts for the largest cost in long term follow up costs (\$31471.29), adverse event costs (\$20159.77), acquisition costs and administration

cost for induction (\$35735.79/\$1966.07), acquisition costs and administration cost for maintenance(\$29556.05/\$1002.96) and post discontinuation therapy costs (\$15596.30). Also, bevacizumab dominates the top of the list of price per unit, possessing \$620.89/100mg. The high cost will surely add disadvantages to the drug's extensive usage, making the medication less accessible to patients.

In summary, although the use of bevacizumab may have a positive influence on the treatment of NSCLC, some questions still remain. What exact medication should bevacizumab to combine with to reduce the adverse events? Comparing to some targeted therapy medication, such as cetuximab and cixutumumab, bevacizumab seems to be the better choice for NSCLC patients [5]. Can bevacizumab be replaced by other state-of-art medication in order to achieve a better therapeutic effects and assuring safety outcomes? Future studies are needed for clinical oncologists to focus on these issues.

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