Background: We aimed to report the safety and short-term efficacy of nanoparticle albumin bound paclitaxel (Nab-PTX) in advanced non-small cell lung cancer (NSCLC) in China as a second line and later treatment, and explored its efficacy affected by previous paclitaxel treatment with or not.

Methods: Advanced NSCLC patients who failed in prior treatment and received weekly Nab-PTX regimen on days 1, 8 (a dose of 130 mg/m2/week) treatment were included. The primary efficacy endpoint was progression-free survival (PFS). Toxicity was evaluated with NCI-CTCAE 3.0.

Results: A total of 98 patients at the Cancer Institute & Hospital of the Chinese Academy of Medical Sciences (Beijing, China) between June 2010 and July 2015 were enrolled. The median PFS and overall survival (OS) were 4.34 months (95% CI 3.508 to 5.165 months) and 11.73 months (95% CI 9.231 to 14.247 months), respectively. PFS was no significant difference between patients with previous paclitaxel treatment and without previous paclitaxel treatment (median, 4.11 versus 4.53 months, respectively, \( p = 0.195 \)). OS was also no significant difference between the two arms (median, 9.69 versus 14.62 months, respectively, \( p = 0.190 \)). The objective responses rate (ORR) and disease control rate (DCR) of all patients were 22.4% and 74.5%, respectively. The ORR and DCR were 23.0% and 70.5%, respectively in one arm with previous paclitaxel treatment, while in another arm without previous paclitaxel treatment, the results were 21.6% and 81.1%. No significant difference in ORR (\( p = 0.533 \)) and DCR (\( p = 0.244 \)) between the two arms. Grade 3 or higher adverse events (AEs) of all patients was neutropenia (25.5%), leukopenia (12.4%), peripheral neuropathy (5.1%), myalgia/arthritis (5.1%), anaemia (3.1%), and fatigue (1.0%), respectively.

Conclusions: The Nab-PTX was effective and well tolerated as second line or later treatment in advanced NSCLC patients. Even used paclitaxel treatment previously did not affect the efficacy and PFS of Nab-PTX.

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