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NOV-002, a Chemoprotectant/Immunomodulator, Added to First-Line Carboplatin/Paclitaxel in Advanced Non-Small Cell Lung Cancer (NSCLC): A Randomized Phase 1/2, Open-Label, Controlled Study

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Background: NOV-002 is a proprietary formulation of oxidized glutathione that modulates production of cytokines and hematopoietic growth factors. A randomized, multi-site advanced NSCLC trial conducted in the Russian Federation showed a one-year survival rate of 63% with NOV-002 + cytotoxic chemotherapy compared to 17% with cytotoxic chemotherapy alone.

Methods: Forty-four chemotherapy-naïve, Stage IIIB/IV NSCLC patients (ECOG 0-2, stratified by disease stage) were randomized to one of three groups for six months of treatment: Groups A and B: NOV-002 in combination with carboplatin and paclitaxel (C+P). For each nominal 21-day chemotherapy cycle, these groups received 60 mg of NOV-002 i.v. daily for the first 4 days, then 60 mg i.m. (A) or s.c. (B) weekdays for the next 17 days. Group C: C+P alone. Initial doses of C and P in all three groups were 225 mg/m² and AUC 6, respectively. Initiation of repeat C+P cycles required an absence of hematologic and other toxicities in excess of pre-defined values. Primary study endpoints included tumor response (scans performed at baseline and then every two months) and safety.

Results: An intent-to-treat analysis of the best overall objective tumor response (WHO criteria), showed that 11 out of 16 (69%) Group B patients demonstrated greater than 50% tumor shrinkage versus 5 out of 15 (33%) in the control group (C) (p=0.044, logistic regression stratified on disease stage). Six out of 13 (46%) patients in Group A demonstrated an objective response. 100% of NOV-002 treated patients in Group B and 85% in Group A were able to complete four cycles of C+P compared to 50% of control patients (Group C) (p=0.004, chi square). NOV-002 was well-tolerated in this patient population.

Conclusions: These data continue to suggest increased efficacy of NOV-002 plus cytotoxic chemotherapy compared to chemotherapy alone in advanced NSCLC.