A Multi-center Randomized, Open-label, Proof of Concept, Phase II Trial comparing Gemcitabine with and without IMM-101 in Advanced Pancreatic Cancer

Angus George Dalgleish, The IMAGE 1 Trial Investigators

Background: Immunotherapy is becoming established as an effective way of treating cancer. Immodulon Therapeutics is developing IMM-101, a heat-killed whole cell preparation of *Mycobacterium obuense* (NCTC 13365), which modulates systemic immune responses, as an adjunctive immunotherapy for pancreatic cancer.
Methods: Patients with advanced pancreatic cancer and a WHO score of 0-2 were assigned randomly to receive IMM-101 (0.1 mL intradermal injection of 10 mg/mL) plus Gemcitabine (Gem) (1000 mg/m^2 for 3 consecutive weeks out of 4) or Gem alone. Per protocol, this could be continued to a 12-cycle maximum. The primary efficacy endpoint was overall survival (OS). Safety, tolerability and progression free survival (PFS) were also assessed.
Results: A total of 110 patients were randomized, 75 to receive IMM-101 plus Gem and 35 Gem alone (ITT population). The PP population consisted of 63 and 35 patients, respectively. Conclusions were similar; here we report results of the PP analysis. Median OS was increased significantly by 29% to 7.2 months in the IMM-101 plus Gem group compared to 5.6 months in the Gem group (p=0.022; HR 0.60, 95% CI 0.38-0.94). Median PFS was increased significantly by 83% to 4.4 months in the IMM-101 plus Gem group compared to 2.4 months in the Gem group (p=0.003; HR 0.51, 95% CI 0.32-0.81). In the pre-defined sub-group of patients with metastatic disease (n=82), median OS was increased significantly by 70% to 7.5 months in the IMM-101 plus Gem group (n=54) compared to 4.4 months in the Gem group (n=28) (p=0.002; HR 0.46, 95% CI 0.28-0.76). A highly significant 91% increase in median PFS from 2.3 months in the Gem group to 4.4 months in the IMM-101 plus Gem group was observed (p<0.001; HR 0.40, 95% CI 0.24-0.66). IMM-101 was well tolerated. The only adverse events of NCI CTC ≥Grade 3 occurring more frequently in the IMM-101 group (absolute difference in frequency between the groups >5%) were asthenia 10.8% and abdominal pain 8.1% (both 2.9% in the Gem group).
Conclusion: Clinically meaningful increases in OS and PFS were demonstrated with IMM-101. No additional burden of adverse events above those relating to chemotherapy or the underlying disease was observed.