Aim: GFG-β-glucan (Imprime®), a plant innate immune cell activator, is added to monoclonal antibody-targeted cancer cells via receptor–ligand binding. This activates innate group A monocytoid innate immune cells (AICAs) required for binding of Imprime to CR3. Subjects with AIA levels conducive to binding are considered “biomarker positive” (BP).

Methods: In a Phase 2 study, stage IV/IIIb NSCLC subjects received cetuximab (CT) 250 mg/m² following loading dose without (Control, N=46), or with Imprime (Imprime, N=41) in Days 1, 15 and 29 of a 3-week treatment cycle (CT + 30 mg/kg (Imprime, N=41) + 250 mg/m² (CT)) on Day 2 for the 4 to 6 cycles. After completion, subjects achieving radiographic responses (e.g., best overall response at Week 12 (ROC 1.0)) received CT or CT/Imprime maintenance treatment.

Results (updated): Among all ROC evaluate subjects, median overall survival (mos) was 11.5 vs. 9.6 mos in the control group (p=0.26). In the ROC responders, the median survival was 20.4 vs. 18.4 mos in the control group (p=0.70). Demographic factors of age, gender, Eastern Cooperative Oncology Group (ECOG) performance status of 0 or 1, and sub-divided by biomarker status, are shown in Table 2. The incidence of Grade 3 or 4 adverse events and deaths due to AIA in the Safety Population are shown in Table 3. (N=10), respectively (HR 0.79, p=0.277). Demographic factors of age, gender, ECOG performance status of 0 or 1, and sub-divided by biomarker status, are shown in Table 2.

CONCLUSIONS: In summary, the addition of Imprime to the chemotherapy regimen of carcinoma, passabiliy and CT results in improved outcomes in BC in NSCLC. The incidence of Grade 3 or 4 adverse events and deaths compared to control subjects had a good safety profile.

Introduction: Lung cancer is the leading cause of cancer mortality, responsible for an estimated 159,480 deaths in the United States in the year 2013. Non-small cell lung cancer (NSCLC) is a heterogeneous group of various histological subtypes, each presenting its own clinical outcomes of survival. The use of combinations of chemotherapeutic regimens remains the standard of care for advanced NSCLC and the progression-free survival (PFS) and overall survival (OS) of biomarker positive patients with advanced NSCLC ranged from 10-12 mos. in recent years.

Imprime 4mg/kg (Imprime, N=60) on Days 1, 8 and 15 of each 3-week treatment cycle; all following the completion of at least the initial 4 treatment cycles (but no later than 15 mos of treatment). The incidence of Grade 0-3 adverse events and deaths due to AIA in the Safety Population are shown in Table 3.

Results: Safety: Of the 115 evaluable subjects, 94% were able to continue or receive any chemotherapy, leaving 29 subjects in the Control and 39 subjects in the Imprime group for the 2nd maintenance treatment. Subjects were consistent with toxicities being attributable to be cetuximab and the biomarker contributed positively. The incidence of the most common Grade 3 or 4 adverse events (AEs) in either treatment arm is shown in Table 4.

OVERALL INCIDENCE OF GRADE 3 OR 4 ADVERSE EVENTS BY TREATMENT ARM

<table>
<thead>
<tr>
<th>Treatment Arm</th>
<th>Grade 3 or 4 Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>72% (21/29)</td>
</tr>
<tr>
<td>Imprime</td>
<td>55% (21/39)</td>
</tr>
</tbody>
</table>

The proportion of patients surviving over time in the Safety Population, overall survival (OS) and progression-free survival (PFS). The graphical display of the Kaplan-Meier survival plot for Imprime 4mg/kg in the NSCLC population is shown in Figure 1.

SUMMARY AND COMMENTS

• The primary endpoint for the study was met. The addition of Imprime GFG to the backbone therapy of cetuximab plus carboplatin and paclitaxel as first-line therapy for Stage IIIb/IV NSCLC reached a statistically improved objective response rate vs. that in the Control Arm.
• Clinical outcomes were further improved in the Imprime GFG biomarker positive subject populations compared to non-biomarker positive subjects. Imprime GFG biomarker positive patients had -Objective response rates were significantly increased overall as well as in the squamous subsets and non-squamous subsets.
- Although the study was not powered for survival, survival analysis was performed across all histologies.
- Improved survival observed in both squamous and non-squamous histology subpopulations.

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