INTRODUCTION

Imprime PGG is a proprietary, soluble, wheat-derived 1,3-β-glucan that binds complement and stimulates immune responses. Imprime PGG is indicated in Europe for the treatment of patients with advanced non-small cell lung cancer (NSCLC) and has been approved by the European Medicines Agency (EMA) for use in combination with cetuximab in the first-line treatment of stage IV NSCLC. Imprime PGG has also been shown to be broadly effective in healthy volunteers. Imprime PGG exerts anti-tumor activity by inducing immunological responses such as complement activation.

METHODS

Whole blood binding assay and ABA immunoassay: Whole blood samples from 37 healthy volunteers were denatured by ethanol, and serum was pooled for batch assays. Serum from 35 patients with advanced NSCLC treated with Imprime PGG in combination with cetuximab, carboplatin, and paclitaxel was also used. ABA was measured using an immunosorbent assay (ELISA) for measuring serum ABA has been developed to quantify ABA levels. The ELISA was based on the principle that glucan antibodies (ABA) are required for binding of Imprime PGG to these innate immune cells. The binding of Imprime PGG to serum ABA was determined using a competitive ELISA, and values for each patient were calculated using standard curves generated from human serum used as reference standard were the reportable value (relative antibody units/mL; RAU/mL).

Innate immune cell functional assays: Neutrophil binding of and functional responses to Imprime PGG.

Translational Study

Healthy subjects with end-stage renal failure were enrolled to determine the time course of ABA following administration of Imprime PGG. The study was conducted at the National Cancer Institute in Bethesda, MD. The study was approved by the Ethics Committee for Human Subjects Research of the National Cancer Institute, and all subjects provided written informed consent. The study was conducted in accordance with Good Clinical Practice guidelines and the Declaration of Helsinki.

RESULTS

CONCLUSIONS

Imprime PGG in combination with cetuximab, carboplatin, and paclitaxel resulted in significantly improved treatment outcomes in patients with advanced non-small cell lung cancer. Imprime PGG was well tolerated in combination with cetuximab, carboplatin, and paclitaxel. The adverse event profile was consistent with the expected profile from the backbone chemotherapy.

In patients with advanced non-small cell lung cancer, Imprime PGG was well tolerated in combination with cetuximab, carboplatin, and paclitaxel. The adverse event profile was consistent with the expected profile from the backbone chemotherapy.

Safely

Achieve events were observed in 100% of patients.

Grade 3 or 4 adverse events were observed in 84% and 83% of control patients, respectively.

Fatal adverse events observed in Imprime PGG patients were neutropenic sepsis with renal failure and adult respiratory distress (both considered unrelated to Imprime PGG).

REFERENCES

2. Salvador C et al., Lancet Oncol, 2013
8. Antonysamy MA, et al., 15th International Congress of Immunology, Milan, IT, August 2013

ENDOGENOUS ANTI-B-GLUCAN ANTIBODIES AS A POTENTIAL PREDICTIVE BIOMARKER FOR CLINICAL RESPONSE TO IMPRIME PGG IMMUNOTHERAPY IN NON-SMALL-CELL LUNG CANCER (NSCLC) PATIENTS

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Table 1.

<table>
<thead>
<tr>
<th>Biomarker</th>
<th>Control</th>
<th>Imprime PGG</th>
<th>Biocompare</th>
<th>Biomarker</th>
<th>Control</th>
<th>Imprime PGG</th>
<th>Biocompare</th>
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<tr>
<td>Serum ABA</td>
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<td>Serum ABA</td>
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Table 2.

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<th>Non-Squamous</th>
<th>Squamous</th>
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<td>Imprime PGG</td>
<td>Control</td>
<td>Imprime PGG</td>
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<tr>
<td>Median Overall Survival</td>
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<td>12.9 mo</td>
<td>11.3 mo</td>
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<tr>
<td>Control</td>
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<td>Control</td>
<td>Imprime PGG</td>
</tr>
<tr>
<td>13.4 mo</td>
<td>13.4 mo</td>
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</table>

CONCLUSIONS

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