Background

Basal cell carcinoma (BCC) is the most common skin malignancy, comprising about 75% of cases of skin cancer, and is the number one skin cancer.\(^{1}\) BCCs are usually well-differentiated and for the majority is slow-growing; however, the disease is associated with subsequent malignancies.\(^{2}\) The underlying molecular signaling pathway regulates tumor growth and, at least inactivation of this pathway leads to BCC development.\(^{3,4}\) The underlying molecular signaling pathways are currently under investigation by the skin cancer field.\(^{5}\)

Hedgehog-dependent pathways are characterized by increased proliferation in the presence of suppressive immune cells, such as the lamina associated macrophages (LAM), cancer associated macrophages (HCS), regulatory T (Treg) cells, and cancer associated fibroblasts (CAFs).\(^{6}\)

BCC is associated with increased numbers of regulatory cells (Treg) and a CAF-induced immune suppressive environment. Therefore, it is not surprising that there is a strong expression of effector cells in normal tissues to increase tissue damage. These proteins also accumulate in immune systems in the regulatory system, resulting in the development of a suppressive immune system.\(^{7}\)

Conversely, increased immune checkpoints are actively involved in promoting inhibitory self-tolerance in adaptive immunity, especially in tumors.\(^{8}\) The availability of various immune checkpoint molecules is detected in the circulation of cancer patients, where they remain unchanged.

Lymphocytes detect levels of these soluble on the immunosuppressive and co-inhibitory immune checkpoint in patients with various subtypes of basal cell cancers.\(^{9}\) A high level of tumor-infiltrating lymphocytes (TIL) is one of the most important clinical markers of cancer (BCC), which also plays an important role in the development of the immune response.

The current study compared a group of cancer patients (n=4), the clinical subtype of BCC, and the healthy controls (n=3).

Table 1 compares the systemic concentration of co-inhibitory and co-stimulatory immune checkpoint molecules in advanced BCC patients (patient characteristics are summarized in table 1).

<table>
<thead>
<tr>
<th>Co-inhibitory Molecules</th>
<th>Median pg/ml (IQR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAG-3</td>
<td>2486.86 (1524.59)</td>
</tr>
<tr>
<td>HVEM</td>
<td>43 (33)</td>
</tr>
<tr>
<td>PD-1</td>
<td>7519.74 (4000.10)</td>
</tr>
</tbody>
</table>

Table 2 compares the systemic concentration of co-inhibitory and co-stimulatory immune checkpoint molecules in advanced BCC patients and healthy controls.

<table>
<thead>
<tr>
<th>Co-inhibitory Molecules</th>
<th>Median pg/ml (IQR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAG-3</td>
<td>2486.86 (1524.59)</td>
</tr>
<tr>
<td>HVEM</td>
<td>43 (33)</td>
</tr>
<tr>
<td>PD-1</td>
<td>7519.74 (4000.10)</td>
</tr>
</tbody>
</table>

Methods

The study population consisted of a total of 10 South African patients (TGF-β1 24 patients; n=11) with advanced BCC attending the Dermatology Division of the University of Pretoria and Steve Biko Academic Hospital, Pretoria, South Africa.

The patients were recruited at a group of central control patients (n=3). The clinical subtype of BCC was compared with the clinical subtype of healthy controls (n=3). The clinical subtype of BCC was compared with the clinical subtype of healthy controls (n=3). The clinical subtype of BCC was compared with the clinical subtype of healthy controls (n=3).

Statistical Analysis

The primary hypothesis was that there was a significant difference in the plasma levels of soluble co-inhibitory immune checkpoint molecules in BCC patients and healthy controls.

Conclusions

This study is the first to compare the systemic concentration of co-inhibitory immune checkpoint molecules in advanced BCC patients and healthy controls. The study demonstrates that early in the course of the disease, is warranted.

The results indicate that early detection of potential biomarkers is important for the development of immune checkpoint inhibitors early in the course of the disease. The results underscore the therapeutic promise of immune checkpoint inhibitors early in the course of the disease.

The study results are consistent with previous studies that have reported significant positive correlations with PD-L1, PD-L2, and PD-1 in BCC patients and healthy controls. The results underscore the therapeutic promise of immune checkpoint inhibitors early in the course of the disease.

Acknowledgments

The study was supported by the National Health Laboratory Service, Pretoria, South Africa. The study was supported by the National Health Laboratory Service, Pretoria, South Africa. The study was supported by the National Health Laboratory Service, Pretoria, South Africa.

References


