ONCOS-102 AND PEMETREXED/CISPLATIN IN PATIENTS WITH UNRESECTABLE MALIGNANT PLEURAL MESOTHELIOMA

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**Background**

- ONCOS-102 is a serotype 5 adenovirus that is genetically modified to facilitate infection of cancer cells.
- Mesothelioma is a rare cancer that is almost always caused by exposure to asbestos.
- Gene therapy can assist in blocking the immune tolerance acquired by tumours and activates the immune system against tumour cells.
- Several oncolytic viruses are in clinical development and one, Imlygic, has been approved in advanced melanoma.

**Immunology**

- Genetically engineered adenoviruses such as ONCOS-102 have an inherent ability to induce antitumour immune response.
- GM-CSF enhances stimulation of the immune system.
- Improved infectivity of cancer cells.

**Clinical experience**

A Phase I clinical trial (NCT01598129) of ONCOS-102 with cyclophosphamide (CPX) has been completed. Twelve patients with refractory advanced malignancies were included.

**Main criteria for inclusion**

- Histologically confirmed unresectable (advanced) malignant pleural mesothelioma.
- Patients with malignant tumour, unless the patient has been without evidence of disease for at least 5 years, or, the tumour is a non-melanomatous skin tumour, cervical carcinoma in situ, or prostatic carcinoma in situ.

**Biological sample collection**

A number of biological samples will be collected at different timepoints during the course of the study (see Figure 3a and 3b).

**Follow-up**

The study is completed after 6 months, thereafter patients will be followed every 3 months until the end of the study.

**Study Status**

Three active sites in Spain, additional sites being added. Submission process ongoing in France and Italy. Approximately 10 sites is total needed.

**Immune cell analysis**

- Immune cell analysis was done in blood (PBMC) and tumour tissue samples at baseline and during treatment.
- Immune cell analysis included the analysis of T-cells specific for ONCOS-102.

**References**

1 Qiao et al.,; Nat Med; 1; 37-44 (2008)
2 Kuryk et al.; Int. J. Cancer; 139, 1883–1893 (2016)
3 Ranki et al.; Journal for ImmunoTherapy of Cancer; 4:17; (2016)
4 10 patients with advanced colorectal cancer used to estimate virus replication, cellular responses and humoral responses

Figure 1. The structure of ONCOS-102

- ONCOS-102 and Pemetrexed/Cisplatin in Patients with Unresectable Malignant Pleural Mesothelioma

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**Background**

- ONCOS-102 is a serotype 5 adenovirus that is genetically modified to facilitate infection of cancer cells.
- Mesothelioma is a rare cancer that is almost always caused by exposure to asbestos. The prognosis for patients with mesothelioma is poor. Median survival ranges between 21 months from diagnosis for patients with early (Stage I) disease, and 12 months for patients with advanced (Stage IV) disease.

**Antitumor activity**

- Single cyclephotodynamic (CPD) dose followed by intratumoral injection of ONCOS-102 at 1x106 pfu/cell for 14 days, cisplatin(75mg/m²) is given every 3 weeks for a maximum of 6 cycles.

**Clinical experience**

A Phase I clinical trial (NCT01598129) of ONCOS-102 with cyclophosphamide (CPX) has been completed. Twelve patients with refractory advanced malignancies were included.

**Main criteria for inclusion**

- Histologically confirmed unresectable (advanced) malignant pleural mesothelioma in patients who are not candidates for curative surgery and who have received therapy with pemetrexed/cisplatin is considered appropriate.
- Patients must have received pemetrexed/cisplatin to which their tumour initially responded, and have relapsed after at least 6 months.

**Follow-up**

The study is completed after 6 months, thereafter patients will be followed every 3 months until the end of the study.

**Study Status**

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**Immune cell analysis**

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