NOVEL APPROACH TO TREAT PLEOMORPHIC LUNG CARCINOMA UTILIZING AUTOLOGOUS DENDRITIC CELLS

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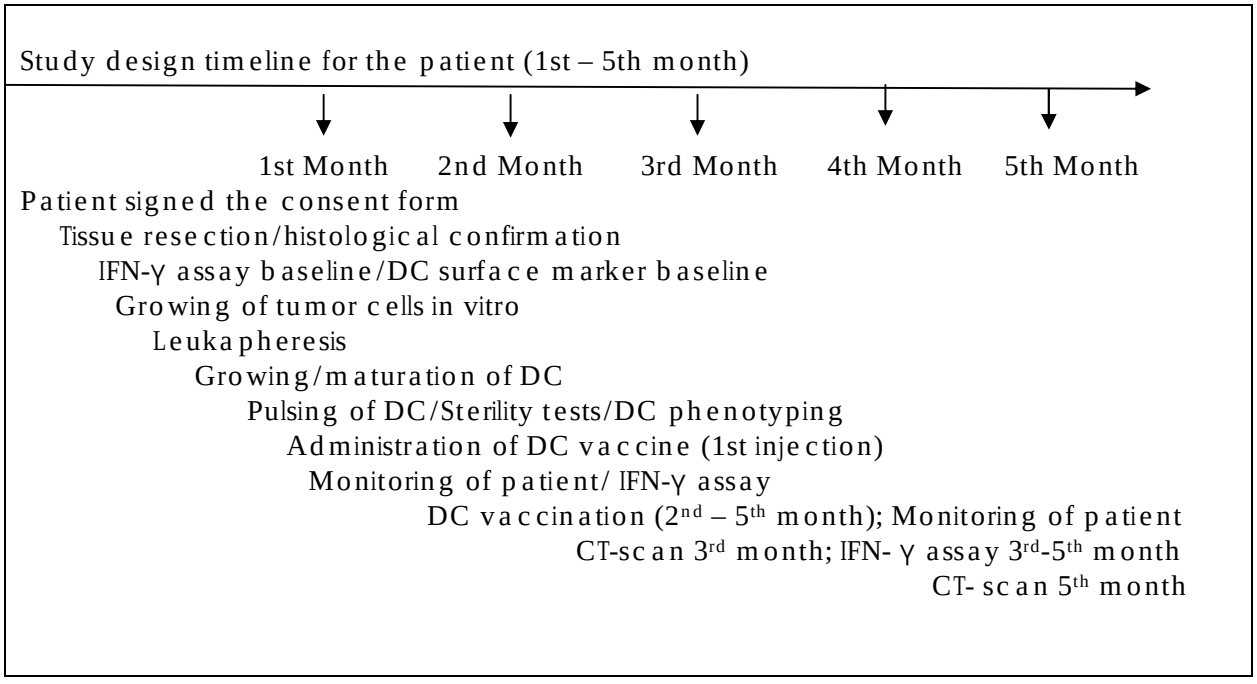
BACKGROUND

Pleomorphic carcinoma of the lung is a malignant epithelial tumor that is characterized with carcinomatous and sarcomatoid components. Due to its rarity, few studies have been reported in the literature and its clinical management and therapeutic regimen remain limited.

We embarked on the potential of autologous dendritic cells to treat pleomorphic lung carcinoma as an adjuvant therapy. A 34 year old male underwent left upper lobectomy . Microscopic examination showed a poorly differentiated epithelial neoplasm composed of several tumor cells that were polygonal with hyperchromatic to vesicular, highly pleomorphic nuclei and ample cytoplasm disposed in dyshesive nests and surrounded by malignant spindle cells at stage 1B. Cytokeratin immunohistochemical studies showed diffuse and strong positive staining on all tumor cells, while vimentin result ruled out a sarcoma.

DESIGN



Response evaluation will be based on disease progression or RECIST and will be monitored until 2 years whenever possible.

RESULTS

The tumor cells were mechanically minced into tiny fragments and were cultured in RPMI-1640 medium with 5 % autologous serum and antibiotics. Propagation of the tumor cells were carried out and cells were exposed to 10,000 rads for 30 min. Trypan blue staining was done to confirm that the tumor cells were dead.

Using the apheresis machine, stem cells from the peripheral blood were collected. Dendritic cells (DC) CD34 and CD86 profiles were determined using flow cytometric approach.

Maturation of the DC were noted 9 days later after incubation with Cap-GM (growth factor for DC cells which primarily contain GCSF). Maturation of the DC were confirmed by the rightward shift of the cells with the CD-86 surface markers. DC cells were cocultured with the dead tumor cells.

After intradermal dendritic cell vaccine administration to a pleomorphic lung carcinoma patient, no adverse effects were observed.

CONCLUSIONS

Preliminary data suggests that autologous dendritic cells recognized and attached to tumour cells *in vitro* as shown by immunofluorescence microscopy. Flow cytometric data demonstrated maturation of the dendritic cells, using CD86, as a surface marker after 9 days. The patient who received the autologous dendritic vaccine is being monitored for the potential immunological and clinical response.