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Salivary cytokines as putative biomarkers for treatment response of HNC Patients undergoing radiotherapy

Head and Neck Cancer (HNC) including Oral Squamous Cell Carcinoma (OSCC) is the sixth most common neoplasia worldwide with an incidence estimated at 529.500 cases and 292.300 deaths per year. Alcohol and tobacco use are between the most common risk factors. Besides, human papillomaviruses (HPVs) infection has been recently related to its pathogenesis. Typically late diagnosis requires surgical intervention and radiotherapy treatment (RT). Ionizing radiation is known to increase the expression of a number of cytokines involved in inflammation and wound healing. Salivary proteins have promising features to be used as biomarkers for screening and outcome prediction in this malignancy. A research to evaluate salivary cytokine levels as indicators of response to radiotherapy has been undertaken. Immunoassay based on multi analyte profiling technology was used to quantify salivary concentration of various inflammatory and angiogenic proteins in 23 advanced cases of OSCC and HNC and 13 healthy volunteers. The correlation between patients before and after RT showed a significant growth of IL-10, MCP-1 and IL-8 related to the irradiation dose (Fig.1). In addition, comparing Controls with patients after RT revealed a trend towards increased EGF, IL-4, IL-6, IL-8, MCP-1 and TNF-α levels, possibly to link to the treatment(Fig.2). Preliminary results indicate that a saliva-based test could provide an accurate, non-invasive and relatively inexpensive monitoring method for predicting the radiotherapy outcomes of HNC patients. Further work intends to validate the present data by analysing a larger sample cohort and establishing correlation with patients clinical parameters.

Biography

Sara Principe has completed a MSc degree in Pharmacy and Industrial Pharmacy at University of Siena in July 2016. Since March 2017 is a part of TRACT Project as a Marie Sklodowska Curie PhD fellow, registered in the University of Valencia, Spain. Currently, she is involved in cancer research associated with clinical and translational biomarkers discovery

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