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Title of Presentation: The Ability of Serum miRNAs to Act as Biomarkers for the Diagnosis of Oral Squamous Cell Carcinoma.

Abstract

Individuals with oral cancer have a poor survival rate and a high level recurrence due partially to the late stage of diagnosis. New methods for earlier detection before the disease is clinically evident would improve survival rates. miRNAs, are a group of small nucleotide molecules, involved in gene regulation that have been linked to tumour suppressing and oncogenic roles in cancer. Circulating miRNA expression profiles have been shown to be useful in delineating healthy individuals from those with various types of cancer. We aim to determine the ability of serum miRNAs to act as a biomarker for oral squamous cell carcinoma (OSCC). 1. Serum samples were collected from patients with oral cancer as well as from non-cancer controls. 48 cancer and 51 control samples were allocated to a training set and 32 cancer and 47 control samples were allocated to a validation set. Training samplers were profiled using an Exiqon real time PCR panel of 742 miRNAs with a subset of miRNAs capable of differentiating between cancer and control samples being determined by logistic regression. The identified miRNAs were profiled in the validation set to cross-validate the results. The initial training model of serum miRNAs allowed differentiation between cancer and control individuals with an area under the curve of 0.92 however upon cross validation this value fell to 0.76.This data suggests that miRNAs secreted into serum have the utility as biomarkers of oral premalignant lesions.