

Proteomics Analysis for Barrett's Oesophagus Biopsies and Oesophageal Lesions in HPV Infected Individuals

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Abstract

Oesophageal lesions caused by HPV are known recently as a contributor to oesophageal squamous cell carcinoma. Some evidences show that these lesions in association with Barrett's oesophagus can progress to oesophageal adenocarcinoma. In addition, these lesions are considered to be precancerous or thought to have a role in progression to cancer by a synergistic effect.

Aims: To identify proteins that are related to pathological lesions of the oesophagus (Barrett's oesophagus and oesophageal HPV lesion) by using proteomic analysis. **Methods:** Four oesophageal biopsies were taken from patients with Barrett's oesophagus, HPV lesions and oesophagitis. Two biopsies were previously confirmed to have HPV lesions using a PCR technique. Proteomics analysis was undertaken by LC/MS/MS using the MudPIT technique.

Results: Two comparison groups of the samples were generated to perform a quantitative analysis for this proteomics approach. The first comparison was between Barrett's oesophagus with HPV and Barrett's oesophagus without HPV. Eleven proteins in this group showed significant association with diseases, including cancers. In addition, one protein was identified previously as a Barrett's oesophagus marker. The second comparison was between an oesophageal HPV lesion and an oesophagitis sample. Five proteins showed potential significance in relation to cancers. **Conclusion:** HPV lesions have over expression of proteins that are related to neoplasia when HPV is associated with Barrett's oesophagus. This generates a hypothesis: HPV infection of the oesophagus could not affect protein expression unless associated with Barrett's oesophagus. Many questions have arisen and need further investigation.

