

benefits of applying pharmaceutical compounding solutions. The research was conducted at three wildlife theme parks on the Gold Coast, Australia. Qualitative research methods used included observations of animals and animal handlers and semi-structured interviews with three specialist veterinarians.

Results

Through thematic analysis of the data various themes were identified, including: an enthusiasm of veterinarians towards pharmaceutical compounding; medicated foods commonly employed in practice; the impact of the lack of suitable commercially available medicines; time constraint problems; incompatibilities between feeding and dosing intervals; and the net cost of the compounding procedure when compared to the figurative 'value' of the animal.

Discussion

The study found that pharmaceutical compounding would be able to deliver more effective solutions than the current techniques employed for the majority of veterinary medication challenges. Pharmacists therefore have a unique opportunity in filling an existing gap in veterinary practice while simultaneously expanding their pharmacy business model.

Barrett's oesophagus: pilot application of MudPIT proteomics to oesophageal tissue after proton pump inhibitor therapy

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Introduction

In Barrett's oesophagus, cancer develops in a multistage process whereby metaplastic epithelium progresses to dysplasia and then to adenocarcinoma. The objective of this pilot study was to use state-of-the-art proteomics approaches to assess protein expression in healthy epithelium, regrown squamous islands (a characteristic of proton pump inhibitor (PPI) therapy), and diseased columnar epithelium.

Method

Biopsies were obtained from a routine surveillance endoscopy from a Barrett's Oesophagus patient with known squamous islands. The samples were treated

with a simple trypsin digest for the proteomics analyses. Nanoflow proteomics was undertaken using a ThermoFinnigan LTQ Orbitrap high resolution tandem mass spectrometer. MudPIT (Multidimensional Protein Identification Technology) used strong cation exchange (SCX) liquid chromatography separation to elute peptides from the column by increasing isoelectric point (allowing an even peptide distribution across an analysis), with characterisation undertaken by electrospray ionisation MS/MS. Identification was undertaken using XITandem searching and strict probability based criteria and verified by searching against a reversed protein database.

Results

Proteome analysis revealed 221 proteins. Some of the main proteins of interest found in relatively high abundance in pre-metaplastic Barrett's epithelium have not been previously identified but have been implicated in other metaplastic pathways including anterior gradient protein 2 homolog (AGR2), dermcidin, peroxiredoxin V (PrxV), S100A8 and histone H2A and H2B types. Histone modification has recently been shown to predict prognosis in lung cancer and other cancer types and our preliminary results provide the first indication that epigenetic changes may play a role in gastroesophageal disease.

Discussion

MudPIT proteomics applied to Barrett's Oesophagus samples have identified many proteins not previously reported in Barrett's Oesophagus but associated other cancers (breast, prostate, cutaneous, lung) and prognosis. Nanoflow MudPIT proteomics has considerable potential to elucidate Barrett's Oesophagus pathogenesis.

Degradation kinetics of penethamate in aqueous solutions determined by a stability indicating reversed phase HPLC assay

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Aim

To investigate the kinetics of degradation of penethamate (PNT), a diethylaminoethyl ester prodrug of benzylpenicillin (BP) in aqueous solutions