with FCP may have a distinct phenotype contributing to its pathophysiology. These findings warrant further investigation to determine if the endophenotype identified in our study is a risk factor for the development of chronic pain such as that observed in other functional gastrointestinal disorders.

Competing interests None.
Keywords Pain.

PWE-061

PSYCHOPHYSIOLOGICAL RESPONSES TO OESOPHAGEAL STIMULATION IN FUNCTIONAL CHEST PAIN: A CASE CONTROL STUDY

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Introduction Functional chest pain of presumed oesophageal origin (FCP) is a complex disorder whose pathophysiology is incompletely understood. In a previous study we have demonstrated the existence of two reproducible human pain endophenotypes based on personality, serotonin transporter genotype (5-HTTLPR), autonomic (ANS) and cortisol responses to pain. The aim of this study was to evaluate the clinical salience of these endophenotypes in patients with FCP.

Methods 20 patients with FCP (9 male, mean age 38.7 years, range 21–59 years) and 20 healthy age, sex, ethnicity matched volunteers (9 male, mean 38.2 years, range 22–49) had personality traits assessed using validated questionnaires. Subjects had validated ANS parameters measured at baseline and continuously thereafter. Following baseline recordings, venous blood was taken for cortisol and 5-HTTLPR genotyping. Subjects received 7 somatic stimuli (nail bed pressure) followed by 7 visceral stimuli (oesophageal balloon distension) to pain tolerance. Blood was further sampled for serum cortisol after somatic and visceral pain.

Results Patients had higher neuroticism, state and trait anxiety and depression scores but lower extroversion scores versus controls (all $p<0.005$). Patients tolerated less quantity of somatic and visceral stimulus versus controls (48.4 N vs 70.6 N, $p<0.0001$ and 30 ml vs 50.9 ml, $p=0.009$ respectively). Cluster analysis, demonstrated the presence of 2 clusters or endophenotypes. One endophenotype had higher neuroticism scores ($p<0.0001$), had the short (*s*) allele of the 5-HTTLPR ($p<0.001$), had higher baseline cortisol ($p=0.001$), had higher anxiety ($p=0.002$), higher sympathetic tone at rest ($p=0.001$) and increased their parasympathetic tone to pain ($p=0.001$ and $p=0.002$ respectively). The second endophenotype had higher extroversion scores with the converse psychophysiological profile in the absence of the *s* allele. Patients with FCP were over-represented in endophenotype 1, ($p=0.01$).

Conclusion These results provide further evidence for the existence of 2 human pain endophenotypes and that patients