

more common in those with a history of depression (22% vs 9%, $p=0.04$), although recent metabolic control (HbA1c) was not different between depressed and non-depressed groups. This association also was unrelated to race, BMI, and smoking. These data indicate that histories of depression and poor pregnancy outcomes are associated in diabetic women. This association is possibly related to accelerated diabetic complications in depressed women or to behavioral effects of depression during pregnancy. The effects of depression and its treatment on diabetic pregnancy deserve prospective evaluation.

131

EFFECTS OF TREATMENT ADHERENCE ON METABOLIC CONTROL AND QUALITY OF LIFE IN DIABETIC PATIENTS

Isabel Silva, *Psychology, Porto University, Praxis XXI BD/21804, Porto, Portugal*, Jose Ribeiro, *Psychology, Porto University, Porto, Portugal*, Helena Cardoso, *Helena Ramos, Endocrinology, Santo Antonio General Hospital, Porto, Portugal*

The aims of this study were to examine the effects of treatment adherence on metabolic control and on quality of life of diabetics.

A cohort of 220 individuals (43.6% of which were males; 36.8% with Type 1 diabetes; 62.7% with chronic complications; aged between 16 and 84 ($m=50.79$); 15.5% unmarried; 73.2% married; 4.5 divorced and 6.8% widower) was studied.

Participants answered to the Diabetes Self-Care Activities Questionnaire and to the Quality of Life Scale for Diabetic Patients in the context of a personal interview. Metabolic control was measured in terms of glycosylated haemoglobin.

We found that self-care activities aren't significantly related with metabolic control, neither with age, sex or marital status. Diabetes duration is related with diet adherence ($r=.18$; $p=.00$), and the presence of chronic complications is positively related with adherence to diet ($t=-2.35$; $p=.02$) and to oral medication ($t=-2.39$; $p=.01$). The study also suggest that diet adherence is related with Worry about family and friends' future ($r=.15$; $p=.02$) and with Satisfaction with changes in life because of diabetes ($r=.14$; $p=.03$). Insulin adherence is related with Satisfaction with health care ($r=.20$; $p=.01$) and with Sex life ($r=.26$; $p=.00$), while adherence to oral medication is related with Satisfaction with control over life ($r=.22$; $p=.01$). Self-monitoring adherence is related with Satisfaction with changes in life because of diabetes ($r=.16$; $p=.01$) and with financial independence. The results suggest that patients with better metabolic control have better results in Health Transition ($F=4.49$; $p=.01$), Physical Functioning ($F=3.44$; $p=.03$), Role Physical ($F=3.21$; $p=.04$), Role Emotional ($F=5.21$; $p=.00$), Mental Health ($F=5.14$; $p=.00$), Vitality ($F=6.88$; $p=.00$), Satisfaction with control over life ($F=3.61$; $p=.028$) and Satisfaction with changes in life because of diabetes ($F=5.31$; $p=.00$).

132

DIMINISHED PARASYMPATHETIC FUNCTION IN TYPE 1 DIABETES MELLITUS MODERATES THE RELATIONSHIP BETWEEN PSYCHOLOGICAL DISTRESS AND RESTING EPINEPHRINE LEVELS

L. Kamatowska, J. Klaus, A. Rusiewicz, N. Henry, N. Gonzalez, J. Sklyar, N. Schneiderman, B. Hurwitz, *Psychology, University of Miami, Miami, FL*

Previous research has shown that diminished parasympathetic (PNS) function in individuals with Type 1 diabetes mellitus (DM) predicted greater psychological distress and cardiac structural and functional abnormalities. Elevated resting epinephrine (EPI) has been etiologically linked to cardiovascular disease pathology. The purpose of the present study was to assess whether there is a relation between distress and EPI level, and whether this relationship is moderated by PNS function. The study assessed 42 DM and 35 healthy control subjects (36 men and 41 women, age $M=32\pm 8$ yrs). DM subjects were without a history of major DM or circulatory complications. Three groups (DM1, DM2, control) were derived on the basis of DM status and PNS outflow (during a paced deep breathing procedure); control and DM1 groups had similar PNS levels, while the DM2 group evidenced a decreased PNS level.

The DM2 group had elevated anxiety, anger, and perceived stress ($ps<.05$), and a trend toward higher depression scores ($p=.06$) relative to the other two groups. Although there were no group differences in EPI, regression analyses indicated that grouping significantly moderated the relationship between the following psychological measures and EPI: POMS Depression ($R^2=.27$), Anger ($R^2=.18$), Fatigue ($R^2=.26$), Total Mood Distress ($R^2=.29$); and Spielberger Anger-out ($R^2=.18$). The moderation by grouping is explained by significant differences on each of these measures between the DM2 and control groups: POMS Depression ($B=.54$), Anger ($B=.53$), Fatigue ($B=.64$), Total Mood Distress ($B=.47$); and Spielberger Anger-out ($B=1.65$), whereas no moderation was found between the DM1 and control groups. These findings indicate that DM persons with diminished PNS function are further distinguished by increased psychological distress and a positive relation between psychological factors and EPI levels.

Key to posters Abstracts 133-138: Gastrointestinal Disorders

133

ARE COLORECTAL MOTILITY AND PERCEPTION IN HUMAN REALLY CONDITIONED?

Motoyori Kanazawa, *Behavioral Medicine, Masatoshi Endo, Pharmacology, Tohoku University Graduate School of Medicine, Sendai, Miyagi, Japan*, Keiichi Yamaguchi, *Masatoshi Itoh, Cyclotron and Radiolotope Center, Tohoku University, Sendai, Miyagi, Japan*, Shin Fukuda, *Behavioral Medicine, Tohoku University Graduate School, Sendai, Miyagi, Japan*

Gastrointestinal motility and perception are altered by psychophysiological stress in human. However, conditioned response of colorectal motility and perception in human was not fully examined. We tested our hypothesis that colorectal fine contractions, tone, and perception are conditioned with transcutaneous electrical nerve stimulation (TENS). Healthy male subjects ($n=9$, mean age; 24 ± 1 years) participated in this study. A cylindrical polyethylene bag was inserted to the rectosigmoid junction. A computer-driven barostat technique was used to assess the colorectal function, which consisted of mean bag volume, number of phasic volume event (PVE), and perception thresholds. Subjects were given combination of loud buzzer horns as conditioned stimuli (CS) and following TENS at the back of the left hand as unconditioned stimuli (US). After 3 CS+US periods, the same CS+US (7 mA) period, the CS+1/2US (4 mA) period, and the only CS (0 mA) period were followed in randomized order. Number of PVE after stimulation was significantly more than that before stimulation at all the periods, respectively ($p<.05$). The bag volume after stimulation was significantly smaller than that before stimulation at the CS+US period ($p<.05$) and had tendency of decrease at the only CS period ($p<.01$). The discomfort threshold at the end of the study was significantly decreased compared with that at the beginning of the study ($p<.05$). These results suggested that the conditioned stimuli altered colorectal fine contractions with minor increase in colorectal tone in human. Decreased discomfort threshold of the colorectum may also reflect, at least in part, visceral sensitization with conditioning.

134

INCREASED LEVELS OF ANXIETY IN SUBJECTS SUBMITTED TO ESOPHAGEAL MANOMETRY

Dan L. Dumitrascu, *Traian Gligor, Third Medical, University of Medicine and Pharmacy, Cluj, Romania*

Background and aim: Increased anxiety has been reported in patients submitted to endoscopy, particularly when it was carried out for the first time. Esophageal manometry (EM) is a widely used motility investigation recently introduced also in this country. It has a certain degree of invasivity. Data on its psychological impact are however scarce. Therefore we looked for anxiety in Romanian patients submitted to EM.

Method: 60 consecutive patients referred to EM (for different esophageal symptoms) filled the Spielberger's STAI test just before entering the manometry room and before receiving the usual explanations. The questionnaire provides information on anxiety as a state, i.e. at the moment of investigation (form STAI I) and as a trait, i.e. of everyday (form STAI II). The subjects were 24M/36F, aged 15-75 years, mean \pm SD: 42 ± 16 years. As controls served 30 healthy controls (HC) (15M/15F, aged 20-64 years, mean \pm SD: 40 ± 11). Statistics: two-tailed t test for non-paired values. Results: The STAI I scores expressed as mean (SEM) were $48.5(10)$ in the group submitted to EM vs. HC $38.2(10.9)$ ($p<.05$). The STAI II scores were $46.3(9.5)$ in the group submitted to EM vs. $42.3(12.3)$ in the HC (NS). Thus, anxiety as a state has higher scores in patients submitted to EM than in controls, while anxiety as a trait is normal. There were no significant differences in respect to the etiology of the esophageal illness. Conclusion: These data suggest that in patients submitted to EM, the level of anxiety is increased due to the stress produced by the investigation, not due to esophageal symptoms. Medical approach should be addressed to this anxiety generated by esophageal manometry.

135

ACCULTURATIVE IN JAPAN AND GASTROENTEROPATHY

Shin-ichi Nozoe, *Nobuatsu Nagai, Tetsuro Naruo, Junko Tsutsui, Psychosomatic medicine, Kagoshima University Hospital, Kagoshima, Kagoshima, Japan*

Loss of appetite, constipation, vomiting are the first symptoms of anorexia nervosa (AN). Ulcerative colitis (UC) is a somatic disease in which the mental factor is important. Since both diseases were reported for the first time in England, it has mainly come to set in Western Countries, and incidence and prevalence have increased them in the 20th century. In those days, these diseases have been reported to be rare to Asia and Africa. On the other hand, AN was seen by non-white female which emigrated to England, and few UC patients seen in these emigrated to Israel from Asia. These have suggested that AN and UC tend to be influenced by acculturation. Japan is most westernized country from the middle of the 20th century. Relation of these diseases and acculturation is clarified from