Abstract 1767

COULD LASTING REDUCTIONS IN NATURAL KILLER CELL CYTOTOXIC ACTIVITY IN WOMEN WITH OLDER AGE OF FIRST FULL TERM PREGNANCY CONTRIBUTE TO THEIR INCREASED RISK OF BREAST CANCER?

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The protective effect of having a child on a woman's risk of developing breast cancer is preceded by a period of increased risk. The period of increased risk becomes progressively longer for women who are older at the time of their first full-term pregnancy (FFTP), exceeding 20 yrs for those over 30. The mechanisms responsible for this pregnancy-associated breast cancer risk are poorly understood. Possible immunologic mechanisms are suggested by a large literature documenting changes in systemic immune function during pregnancy, including reduced natural killer cell cytotoxicity (NKCC). The present study explored the possibility that older age at FFTP may be associated with lasting reductions in NKCC independent of potential psychological and behavioral covariates. A convenience sample of 58 healthy parous women (age: 41±8, 26-63) was scheduled for study during the luteal phase of their menstrual cycles. Participants completed validated questionnaires, including the Brief Symptom Inventory, the Perceived Stress Scale, the Profile of Mood States, and a Demographic/Health Behavior Questionnaire. Blood was collected between 8-11AM by venipuncture for blind assessment of NKCC using standard Cr-release whole blood protocols with K562 targets. Consistent with the study hypothesis, NKCC was found to be negatively related to age at FFTP ($p<.005$). This relationship remained significant ($p<.01$) after inclusion of current age and number of children (mean=2.1) in the model. When analysis was limited to premenopausal women, similar results were found. Psychological, demographic, and health behaviors did not account for significant effects. Results suggest that the suppressive effects of pregnancy on NKCC may be particularly severe and/or long lasting in women with older ages at FFTP. Findings stress the importance of additional research to explore the contribution of reduced NKCC to pregnancy-associated risk of breast cancer.

Abstract 1196

PATTERNS OF BRAIN ORGANIZATION AND PREVALENCE OF ASTHMA

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The author has hypothesized that patterns of brain organization are related to health outcomes. The present study is a preliminary test of this hypothesis as it may apply to asthma. The hypothesis predicts that individuals with brains characterized by a large number of anomalous brain conditions (ABCP) will have an increased prevalence of many disorders including asthma.

The present study attempts to test this prediction in a group of 436 females with a lifetime diagnosis of major depression from the author's private psychiatric practice (1961-2005). ABCP are behavioral phenomena that deviate from the statistical norm of the general population (eg., speech disorders, left or mixed handedness, left-right differentiation difficulties). Twenty ABCP were used as "markers" to designate the patterns of brain organization with which they are associated. Since considerable evidence indicates that each ABCP is associated with the activation of different brain systems, the number of ABCP reported by each individual delineates different patterns of brain organization.

Sixty-eight (15.6%)of the patients had a lifetime diagnosis of asthma. Index age and years of education of the groups with and without asthma were not significantly different.The prevalence of asthma was found to be significantly correlated with the nunber of ABCP ($r=.12$, $p<.05$). Analyzing the same data with the Mantel-Haenszel Chi-Square, this relationship was significant (6.09, $p<.01$). The prevalence of asthma in patients with 0-1 ABCP (N=37) was 8%, while that in patients with 8 or more ABCP (N=41)was 21.9%. Using logistic regression,the number of ABCP were found to make an independent contribution to the prevalence of asthma when family history of asthma was controlled ($p=.01$). These data lend support to the hypothesis.

Abstract 1061

PLACEBO ANALGESIA AND HEART RATE VARIABILITY

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The present experiment investigated whether administration of placebo affected heart rate variability during heat pain. It was hypothesized that the ratio of low frequent to high frequent (LF/HF) heart rate variability would decrease after administration of an inert substance together with information that it was a powerful painkiller. In a within subjects design, 20 participants (10 females) were tested on two separate days, one day for the placebo condition and one day for control. In the placebo condition, the participants received two capsules containing 75mg lactose each during the second of five pain tests, with information that the pills were a high dose of a standard over-the-counter analgesic with high pain analgesic effect on heat pain. In the control condition, the same subjects underwent the same five pain tests, but without placebo administration. Pain tests consisted of heat pain (+46C, duration 240 seconds) to the forearm. ECG was recorded continuously for spectral analysis of heart rate variability. Subjective pain intensity, pain unpleasantness, stress and arousal were measured on VAS scales during each pain test. In addition, mood was measured by the SAM. Results revealed that the LF/HF ratio during painful stimulation decreased significantly in the placebo condition compared to the control condition after placebo administration ($F(1,19)=8.76$, $p<.01$), but this effect was only significant for the first two pain tests after placebo administration. Moreover, a main effect of placebo on heart rate variability was found ($F(1,19)=8.43$, $p<.01$), with lower ratio of LF/HF in the placebo condition. There was lower pain intensity ($F(1,19=14.99$, $p<.01$) and pain unpleasantness ($F(1,19)=4.74$, $p=.04$) in the placebo condition compared to the control condition. Subjective stress during pain was decreased after placebo administration, and there was lower subjective stress in the placebo condition compared to the control condition ($F(1,19)=13.06$, $p<.01$). There were no significant effects on arousal or mood. The results from the present experiment suggest that placebo analgesia is accompanied by a reduction in cardiac autonomic activation and a reduction of subjective negative emotions.

Abstract 1805

PERSONAL CONTROL IN CHRONIC PAIN SUFFERERS DURING ACUTE INTERPERSONAL STRESS

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Among individuals with Rheumatoid Arthritis (RA), pain-associated stress can severely impact wellbeing. Psychological attributes, such as a sense of personal mastery, may attenuate the effects of chronic pain on life quality. We tested the hypothesis that a high sense of mastery would predict lower pain, perceived stress, fatigue, and mean arterial pressure (MAP) than would a low sense of mastery during an acute, interpersonal stressor.

Seventy-four individuals with RA completed a psychophysiological laboratory session involving MAP measurements, as well as self-ratings of stress, joint pain, and fatigue. Measurements were collected before, during, and after an interpersonal stressor. To assess personal mastery, exploratory and confirmatory factor analyses were conducted on the Pearlin Mastery Scale based on recommendations by Reich and Zautra (1991).

The Pearlin Mastery Scale yielded two distinct factors: fatalism and control. Both fatalism and control were significant predictors of the wellbeing variables. Individuals with a highly fatalistic style demonstrated higher general levels of mean arterial pressure ($F(1) = 3.41$, $p<.1$) and reported greater joint pain ($F(1) = 4.72$, $p<.05$) across all periods. Individuals with a high sense of control also evidenced lower MAP ($F(1) = 3.73$, $p<.1$) and reported less stress ($F(1) = 7.44$, $p<.01$) and fatigue ($F(1) = 5.16$, $p<.05$). Neither fatalism nor control were related to objective measures of disease severity (r's = -.10, p=NS and -.02, p=NS, respectively).

RA patients with a high level of personal mastery, as evidenced by scores on two distinct indices, experience lower MAP, and report less pain, stress and fatigue. Although fatalism and control were not related to objective disease state, they seem to play an important role in the experience of wellbeing for people with RA.