

Methods: AN or ARFID patients (15 + 15; range 6-18 years), were assessed by neuropsychological tools, such as: Wechsler Intelligence Scale to measure I.Q. profile, NEPSY-II to explore attention and executive functions, Tower of London test to detect planning and problem solving abilities, the Bells Test to evaluate visual selective and focused attention, the Wisconsin Card Sorting Test (WCST) for assessment of flexibility and directing behaviors by achieving a goal and the Rey-Osterrieth complex figure test (ROCF) to assess visual-spatial abilities.

Results: Patients with ARFID presented impairments in several executive functions domains, with difficulties in the impulse inhibition, in the sustained attention and in visual-spatial skills. Finally, in their anamnesis a higher comorbidity with neurodevelopmental disorders such as specific learning disorder has been underlined.

Conclusions: The identification of specific deficit in neuropsychological profile of ARFID patients could be a rehabilitation target, together with standardized treatment.

Keywords: Avoidant/Restrictive Food Intake Disorder; anorexia nervosa; neurodevelopment; executive function

EPP0601

Microbiome-metabolomics signature in anorexia nervosa (AN) before and after weight regain

F. Marciello^{1*}, A.M. Monteleone², J. Troisi³, G. Cascino¹, G. Serena⁴, R. Dalle Grave⁵ and P. Monteleone⁶

¹Department Of Medicine, Surgery And Dentistry, University of Salerno, Baronissi/Salerno, Italy; ²Department Of Psychiatry, University of Campania "Luigi Vanvitelli", Naples, Italy; ³(ebris), European Biomedical Research Institute of Salerno, Salerno, Italy;

⁴Mucosal Immunology And Biology Research Center, Massachusetts General Hospital-Harvard Medical School, Boston, United States of America; ⁵Department Of Eating And Weight Disorders, Villa Garda Hospital, Garda/Verona, Italy and ⁶Department Of Medicine, Surgery And Dentistry, University of Salerno, Baronissi/Salerno, Italy

*Corresponding author.

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Introduction: The intestinal microbiota has been indicated to have a role in the pathophysiology of AN.

Objectives: Aim of this study was to analyze fecal microbiome profiles of AN women before and after weight restoration and to combine them with fecal metabolomic profiles according to a multi-omics approach.

Methods: The gut microbiome and fecal metabolites were characterized in 21 underweight AN women and after weight restoration and compared with those of 20 healthy women. Microbiome data were correlated with the relevant fecal metabolites.

Results: AN subjects showed a decreased intra-individual bacterial richness, an increased Bacteroidetes-to-Firmicutes abundance ratio and significant changes in the relative abundances of several bacteria at different order levels in both the underweight and weight-restored condition compared to healthy women. The untargeted metabolomic procedure allowed the characterization of 224 metabolites involved in energy, lipid and amino acid metabolism. A genetic algorithm identified 49 relevant metabolites. The relationships among these fecal metabolites and bacteria genera showed structures of different complexity in the 3 groups. In particular, a quarter of those relationships showed a divergent direction in the acute phase of AN than in the weight-restored phase or normal controls. Finally, in

acute AN 70% of those correlations showed a negative sign suggesting a prevalent metabolites consumption by gut microbiome.

Conclusions: Our results provide a picture of the connections between gut bacteria and fecal metabolites in both the acute phase of AN and after short-term weight restoration. Further studies should aim to investigate the significance of gut microbiome perturbations in development and treatment of AN.

Keywords: anorexia nervosa; Gut Microbiota; eating disorders; Metabolomic

EPP0602

Equestrian vaulting as an innovative complementary intervention in eating disorders: A pilot study

B. Collacchi¹, F. Cirulli¹, M. Borgi¹, I. Monaci², A. Piccotti², S. Renga³, L. Dalla Ragione⁴, M. Ettore⁴, G. Biccheri⁴, F. Rossetti⁴ and S. Cerino^{5*}

¹Center For Behavioural Sciences And Mental Health, Istituto Superiore di Sanità, er for Behavioural Sciences and Mental Health, Rome, Italy; ²Department Of Medicine, University of Perugia, Perugia, Italy; ³Psychology, Family Psychotherapy Academy, Rome, Italy; ⁴Umbertide Eating Disorder, USL Umbria 1, Perugia, Italy and ⁵Sphere, ECOS - EU, Massa Martana, Italy

*Corresponding author.

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Introduction: Anorexia is a disorder associated with severe disturbances in eating behaviors and related thoughts and emotions (distorted weight perception, body dissatisfaction). Multidimensional integrative treatment approaches are needed to act both on intrapersonal (e.g. nutritional and psychological) and interpersonal (e.g. behavioral and affective) processes.

Objectives: Aim of this pilot project was to develop a 3-months horse-assisted intervention based on Equestrian Vaulting (EV) and tests its suitability and acceptability in patients with anorexia nervosa. Preliminary observations were carried out to assess the effectiveness of this program on body image, interpersonal relationships and communication and in managing anxiety.

Methods: Seven patients in charge of public service specialized in eating disorder participated in the study. EV activities were performed in an Equestrian Centre included horse grooming, gym exercises and horseback sessions. Clinical and psychological tests (SF 36, IPAQ, EDI3, STAI, SCL90) were administered at baseline and at the end of the program.

Results: Increases in body fat and decreases in lean muscle mass were observed. These were accompanied by an improvement in participants' anxiety and relational skills and in the specific disease related symptoms.

Conclusions: Results indicate the potential of EV to help patients with eating disorder regaining awareness of themselves and their body, a critical element for their future reintegration in the contexts of everyday life and society. Although this is a pilot, the protocol developed represents an initial step to promote the application of EV in persons with eating disorders, informing feasibility in the design of larger controlled studies and suggesting critical variables to be targeted.

Keywords: eating disorder; psychiatric rehabilitation; equestrian sport

EPP0603

Emotional regulation and attachment in adolescents with anorexia nervosa

O. Khaustova* and L. Sak

Medical Psychology, Psychosomatic Medicine & Psychotherapy, Bogomolets National Medical University, Kyiv, Ukraine

*Corresponding author.

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Introduction: The aim of the present study was to investigate emotional regulation and attachment in adolescents with anorexia nervosa (AN).

Objectives: Anorexia Nervosa (AN) is an eating disorder (ED) characterized by self-starvation driving by weight, shape, and eating concerns and extreme dread of food, eating, and normal body weight. Dysfunctional emotional processing and regulation play an important role in the development and maintenance of eating disorders (EDs). Difficulties with emotional awareness and regulation in EDs are hypothesized to have their origins in childhood attachment.

Methods: The study population (N=20) consists of two research groups of patients with AN (group A) and general population controls (group B), matched for gender and age. The age of patients was 12-18 years. All adolescents were female. This study examined the attachment states of mind, assessed by the Adult Attachment Interview (AAI), and emotion regulation difficulties, measured by the Difficulties in Emotion Regulation Scale (DERS).

Results: Group A reported significantly higher attachment insecurity (82% vs 50%) than group B. Group A show higher DERS total (nonacceptance, goals, and impulsivity scores) than group B.

Conclusions: Study results show a crucial role of attachment insecurity and emotional dysregulation in the development and maintenance of AN. Developing interventions to improve emotional management skills in the treatment of patients with AN can be an important component in improving treatment outcomes.

Keywords: anorexia nervosa; Emotional Regulation; attachment; DERS

EPP0604

The effect of eight yoga sessions on interoceptive accuracy, confidence and awareness in a sample of patients with eating disorder: A preliminary studyV. Nistico^{1,2*}, G. Boido², S. Bertelli^{3,4}, S. Anselmetti⁴, M. Ischia⁴, A. Priori^{1,2,5}, O. Gambini^{1,2,3} and B. Demartini^{1,2,3}

¹“aldo Ravelli” Research Center For Neurotechnology And Experimental Brain Therapeutics, Università degli Studi di Milano, Milano, Italy; ²Dipartimento Di Scienze Della Salute, Università degli Studi di Milano, Milano, Italy; ³Unità Di Psichiatria Ii, ASST Santi Paolo e Carlo, Presidio San Paolo, Milano, Italy; ⁴Nutrimente Onlus, Nutrimente Onlus, Milan, Italy and ⁵Iii Clinica Neurologica, ASST Santi Paolo e Carlo, Presidio San Paolo, Milano, Italy

*Corresponding author.

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Introduction: Previous research from our group showed that, after a single yoga class, Interoceptive Accuracy (IAc), tested through the Heartbeat Counting Task, improved in a group of

Healthy Controls (HC), but not in a group of patients with Anorexia Nervosa (AN).

Objectives: To evaluate three levels of interoception (accuracy, confidence (IC) and awareness (IAw)) before and after eight sessions of Yoga in a sample of patients with Eating Disorders (ED: AN, Bulimia Nervosa (BN) and Binge Eating Disorder (BED)).

Methods: 15 patients with ED were included. Before the first yoga session (T0) and 72 hours after the last session (T1), participants underwent: (i) the Heartbeat Counting Task for the evaluation of IAc, IC and IAw; (ii) a psychometric assessment evaluating depression, anxiety, body awareness, alexithymia, self-objectification and eating disorders symptomatology.

Results: At T1, ED patients' IAc appeared higher than at T0, but not IC and IAw. A trend towards significance ($p = 0.055$) emerged for the interaction effect between IAc and diagnosis, with BED patients having a higher increase of IAc at T1 than AN and BN patients. Significant correlations between IAc and Alexithymia, Anxiety and Depression emerged at T0, but were not maintained at T1.

Conclusions: After a program of eight Yoga sessions, IAc in ED patients (but not IC and IAw) increases, especially in BED patients. Moreover, the improvement of IAc following the yoga course seems to be unrelated to the course of depressive, anxious and alexithymic symptoms of ED patients.

Keywords: eating disorders; yoga; Interoception; Heartbeat Counting Task

EPP0605

What drives the excess of physical exercise observed in patients with anorexia nervosa?L. Di Lodovico^{1*}, H. Hattea¹, C. Couton¹, P. Duriez², J. Treasure³ and P. Gorwood¹

¹Hopital Sainte-anne Ghu Paris Psychiatrie Et Neurosciences, Université Paris Descartes, Paris, France; ²Groupement Hospitalier Universitaire (ghu) Paris Psychiatry And Neuroscience, Sainte-Anne Hospital, Paris, France and ³Institute Of Psychiatry, King's College, London, United Kingdom

*Corresponding author.

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Introduction: Anorexia Nervosa (AN) is a severe mental illness characterized by weight reducing strategies such as food restriction, purging behaviours and excessive physical exercise. The persistence of physical exercise despite underweight and its maintaining factors are poorly understood.

Objectives: The aim of this study is to explore the attitudes towards physical exercise and its effects on mood, body image perception and cognitive functioning in patients with AN, and to assess if these effects are associated with trait, or state.

Methods: Eighty-eight patients with AN, 30 unaffected relatives and 89 healthy controls were compared about their attitudes towards three aspects of physical exercise, namely the Exercise Dependence Scale (EDS), the Godin Leisure Time Exercise Questionnaire (GLTEQ) and a standardized effort test. Evaluations of positive and negative affects, cognitive rigidity and body image distortion were repeated at baseline and after the effort test to assess for correlations between the exercise measures and exercise-induced modifications in the three groups.