

MIDDLE EAST OBESITY, BARIATRIC SURGERY AND ENDOCRINOLOGY CONGRESS

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Prevalence of overweight and obesity and its associated risk factors among primary public school students (10-14) years old in Arkaweet-Khartoum-Sudan

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Background: Childhood obesity is one of the most serious health challenges of the 21st century. The problem is global and the prevalence is increasing at an alarming rate.

Objective: To determine the prevalence and associated risk factors of overweight and obesity among primary public-school children (10-14) years old in Arkaweet, Khartoum, Sudan.

Materials & Method: A descriptive cross-sectional school-based study was conducted among primary school student's males and females in Arkaweet, Khartoum, Sudan. Simple random sampling was used. The data was collected through a self-administered questionnaire. Height and weight of the subjects were measured and Body Mass Index (BMI) was calculated, using growth charts of Center of Disease and Control (CDC).

Result: A total of 161 children between ages of 10 and 14 were involved in the study. The prevalence of overweight and obesity was 34% and 4.97%, respectively. Females had a higher prevalence of overweight 38.3% when compared to males 30%. Obesity also was highly prevalent in females (7.4%) than in males (2.4 %) most subjects studied healthy-weight (50.9%). The mean weight is 48.1, mean height is 141.2. There was significance association between educational level of father (p value=0.000), educational level of mother (p value=0.000), job of mother (p value=0.046), physical activities (p value=0.034), watching TV (p value=0.04) and playing video games (p value=0.000) for long hours per day, number of daily meals (p value=0.002), type of food, fast food (p value=0.032) and soft drinks consumption (p value=0.000) and family size (p value=0.003) There was obvious psychological impact among overweight and obese students, as they suffer a lot from their classmate bullying.

Conclusion: The results of the current study provide alarming evidence-based data on the considerable prevalence of childhood overweight and obesity among primary public-school students in Arkaweet Khartoum, Sudan.

Biography

Huda Abbass Alhadi is a 5th year medical student of faculty of medicine at university of Khartoum. She studied research methodology as part of college curriculum. Huda Abbass worked as an author in research on childhood obesity 2017-2018 and as data collector in another research in the university 2016-2017.

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"Whatever. I'm going to die anyway." Psycho-social developmental considerations when working with obese teenagers

John Roberts

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Providing Teenagers with developmentally appropriate explanations of their chronic conditions and treatment recommendations is a component of any medical or psychological intervention. This is challenging as there has been limited research into how Teenagers and young people understand and conceptualise health, illness and treatment (Erikson, 2005). As the period of growth during adolescence and then into early adulthood is a period of fairly rapid, always uneven development and change, it is unlikely that any Psychological tool or technique is going to be effective for all youngsters across this time span. Developing interventions for Obese or Diabetic Teenagers necessarily involves an understanding of young people's changing causal reasoning, their language competencies and self-understanding over this period of development. In addition a thorough appreciation of their environmental context, family, school, peer relationships and so forth, is relevant. This paper provides a brief introduction to the pitfalls and opportunities presented by working with this client group for medical and allied professionals and argues for a more individualised and attitudinal approach to this client group.

Biography

John completed his MA in Social Work Studies at the age of 30 at Exeter University. Practising for 12 years as a Cognitive and Behavioural Psychotherapist and Motivational Interviewer John joined the Improving Access in Psychological Therapies (IAPT) teaching team at Plymouth University in 2007. Leaving in 2012 to take up a more familiar Clinical Leadership Role in 2012 in an IAPT service John joined the Higher Colleges of Technology (HCT) as a Lecturer in Social Work in 2017. John has managed and led Primary and Secondary Care Mental Health Services in the UK as well as becoming Director for his own Independent Consulting and Treatment Company. He consults to a wide variety of Health Insurance and Psycholegal Firms in the UK currently. He has published in Motivational Interviewing and managed through a number of CBT research projects in a clinical setting. He retains an interest in psychological aspects of chronic condition management.

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Notes:

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Serotonin and leptin: Hormonal processes in the brain as regulators of body weight

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In recent years, the study of pathophysiology has made great progress by investigating pleiotropic hormonal interactions and their coexistence with behavioral factors. Leptin, which is produced in adipose tissue and orchestrates a hypothalamic feedback system, has become widely known as the appetite hormone. At the same time, serotonin transferability is correlated with cholesterol levels. The purpose of this study is to investigate the contribution of the brain to weight control. We focus on leptin and serotonin. The materials and methods utilized during this study include a review of publications in a reputable electronic database (PubMed, Elsevier), using specific keywords in the search engine (microglia, obesity, POMC, brain, serotonin, cholesterol). We selected articles from reliable journals whose results were summed up and compared. The results show that in animal models with leptin receptor insufficiency in myeloid cells, hyperphagia and weight gain occur. In the hypothalamus, the number of POMC neurons and α -MSH projections from the arcuate nucleus in the sub-ventricular nucleus are reduced, in combination with the presence of significantly less microglia with phagocytic capacity. At the same time, in a sample of volunteers, cholesterol levels appeared to correlate with the expression of serotonin transporters at the gene level. Correlation is particularly strong in younger people. To conclude, hormonal processes appear to affect human psychology by exerting double biochemical and behavioral control over body weight. This interpretation makes it seemingly more difficult to understand the mechanisms of obesity. However, its individual data provides opportunities for developing new biomarkers and therapeutic approaches.

Biography

Christos Tsagkaris is an undergraduate Medical student in the University of Crete, Faculty of Medicine. He is a Fellow of the Gastrointestinal Immunology Laboratory and the Museum of Medicine of the University of Crete. Moreover he has a special interest in humanities, taking part in medical history and sociology projects.

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Congenital adrenal hyperplasia: Bariatric surgery as a path to parenthood

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Congenital adrenal hyperplasia sufferers are at heightened risk for obesity, which in turn can preclude a successful pregnancy and childbirth. When Allison Landa was diagnosed with CAH at the age of 30, she was told she would likely never be able to give birth. However, following bariatric surgery in 2014, Landa's substantial weight loss gave way to an unplanned pregnancy that resulted in the birth of her son, Baz. Landa offers a personal perspective as both patient and advocate for fellow CAH sufferers. Bariatric surgery may be considered a successful gateway to parenthood with regards to CAH sufferers previously considered infertile.

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Stem cell therapy of polycystic ovary syndrome

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Polycystic Ovary Syndrome (PCOS) is the most common metabolic disorder affecting 5-20% of reproductive age women. The clinical manifestations of PCOS include hyperandrogenism and ovulatory dysfunction. In addition the majority of affected women exhibit reduced postprandial thermogenesis. Brown Adipose Tissue (BAT) is important in the dissipation of energy in the form of heat and changes in BAT could explain the reduction of postprandial thermogenesis found in women with PCOS. Most PCOS treatment approaches aim to reverse such metabolic challenges with lifestyle (exercise and diet) modifications or the use insulin-sensitizing medicines but with limited success. Several recent studies emphasized the importance of ovarian chronic inflammation in driving higher androgen production by ovarian theca cells which in turn drives most of the metabolic PCOS-related aberrations. Human bone marrow Mesenchymal Stem Cells (hMSCs) possesses robust anti-inflammatory properties. We hypothesized that ovarian injection of hMSCs will effectively inhibit chronic inflammation, reduce ovarian androgen output and improve metabolic abnormalities in PCOS patients. In this pre-clinical study, we investigated the effect of ovarian injection of hMSCs on serum androgen levels, on the activation of BAT and on the induction of browning in the white fat of a PCOS mouse model. We anticipated that that the engraftment of hMSCs in the ovaries of this PCOS mouse model will reduce hyperandrogenemia and promote energy expenditure through white fat tissue browning leading to correction of metabolic dysfunctions. To test our hypothesis, we established a drug-induced PCOS animal model by implanting Letrozole (LET) pellet subcutaneously in the neck area (5 mg/pellet, 90 days release) of C57BL6 female mice at the pre-sexual age of 3 weeks. Mice were randomly assigned to one of three groups: (1) Placebo control (untreated), (2) LET group (untreated) and (3) LET group (treated with hMSCs). The mice weight-gain induced by LET treatment was monitored weekly. Human hMSCs were collected from a healthy female donor by flow cytometry using standard surface markers. After 4 weeks of Letrozole treatment, hMSCs (250,000 cells/ovary) were injected into both ovaries using limited laparotomy. The control mice received sham surgery and were injected with PBS. To study the impact of hMSCs on the metabolic criteria of PCOS, we evaluated energy expenditure in hMSCs treated versus control animals by monitoring metabolic parameters such as O₂ volume, CO₂ volume, Respiratory Exchange Ratio (RER), heat production, food intake and motility. Furthermore, gonadal fat tissues collected after 8 weeks of treatment were examined by H&E staining and immune-histochemistry for UCP-1 (Uncoupled Protein-1) and PD-L1 markers for brown fat. The analysis of fat mRNA markers (UCP-1, Prdm-16 and PGC-1a) was done by Q-RT-PCR. Our results show that the engraftment of hMSCs for 8 weeks following PCOS induction with letrozole (LTZ), was able to significantly reduce the circulating levels of androgen in treated PCOS mice (<20 ng/dl) versus PCOS-untreated group (28.1±4.3, P<0.05). Furthermore, indirect calorimetry in open-circuit Oxymax chambers demonstrated significantly increased heat production in PCOS mice engrafted with hMSCs compared to PCOS placebo-treated control group (P<0.05). Additionally, the expression of UCP-1 was significantly increased in the white gonadal fat from hMSCs-treated group versus placebo control both at mRNA and protein levels (P<0.005). We conclude that stem cell therapy might potentially be a novel tool for effective treatment of PCOS women.

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Surgical management of pancreatic neuroendocrine neoplasms women

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Pancreatic Neuroendocrine Neoplasms (PNEs) are rare, accounting for less than 3% of all pancreatic tumors. PNEs exhibit a wide spectrum of clinical behavior that has made classification and staging difficult. While the majority of PNEs are associated with relatively good survival, there can be significant variability in outcomes based on their biological heterogeneity. PNEs share a unique genetic identity, functional behavior and clinical course. Compared with tumors of the exocrine pancreas, they are rare and show a different biological behavior and prognosis. Some PNEs are associated with symptoms of hormone secretion, with increased systemic levels of insulin, gastrin, glucagon or other hormones. More commonly, PNEs are non-functional, without hormone secretion. Surgical resection is the mainstay of therapy, particularly for localized disease that must be tailored to tumor and clinical characteristics. Surgery is indicated in patients with PNEs to alleviate systemic symptoms due to hormone over production, compressive symptoms due to local mass effect and to prevent malignant transformation or dissemination. Small, incidental PNEs are increasingly managed non-operatively. Surgery may also be indicated in some instances of metastatic disease, if all metastatic foci may be removed.

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Prevalence of childhood obesity among school children (8-14 years old) and school preventive measures to fight against this problem in Karri locality, Khartoum state, Sudan

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Background: Childhood obesity is associated with serious health problems particularly an increasing incidence of NIDDM among children.

Objective: To measure the prevalence of childhood obesity among school children age (8-14 years old) and to determine the school preventive measures to fight against obesity.

Methodology: An institutional based cross-sectional study was conducted among school children of age (8-14) years in six schools in Khartoum state, Sudan. A total of 228 pupils (114 males and 114 females) were selected from six basic public schools using cluster random sampling. Anthropometric measurements were recorded for each child according to WHO protocols. Scientific questionnaire was designed to collect information about socio-economic status of families. Data were analyzed using SPSS; WHO AnthroPlus was used to obtain the Z-score (BMI for age and sex) in order to determine the nutritional state for each child. An observation checklist was used to determine the school preventive measures against obesity; it includes information about types of snacks sold in the school, types of activities the children perform while they are in the school.

Result: The prevalence of childhood overweight was 9.6%; obesity was 10.5%; underweight was 25% and the normal weight was 50.9%. There was a positive correlation between pocket money (pound per day) and the childhood overweight and obesity. There was no association between age, gender, mother work, mother education and childhood obesity. Only two schools out of six do not allow soft drinks to be sold in their food canteens. These two schools showed the least mean BMI (18:18.3) in comparison with the mean BMI of the other four schools (18.5, 19.2, 19.4 and 19.9).

Conclusion & Recommendation: The study revealed a high prevalence of childhood overweight and obesity and the overall school's preventive measures against obesity were found to be inadequate for maintaining appropriate physical environment and good nutritional behavior for the pupils. So, there is a need to implement a school preventive program to fight against this problem.

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The impact of obesity on seminal fluid in patients with male infertility

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Aim: Data on the effect of obesity on seminal fluid and men fertility are inconsistent. The aim of this study was to evaluate the impact of Body Mass Index (BMI) on semen characteristics.

Method: A cross-sectional study was conducted on 74 infertile men. Semen sample were collected and sperm concentration, progressive motility, total motility and normal sperm morphology were assessed in accordance with WHO 2010 criteria. For each patient weight and height were measure and patients were divided by BMI into normal weight (BMI: 18.5-24.9 kg/m², n=30), overweight (BMI: 25-29.9 kg/m², n=30) and obese (BMI: ≥30 kg/m², n=14). Seminal fluid parameters were compared among the three groups.

Result: Although sperm concentration was lower in obese men, sperm concentration, progressive and total motility and normal sperm morphology did not significantly differ among normal weight, overweight and obese groups (P>0.05).

Conclusion: Our findings suggest that BMI may have no influence on sperm concentration, motility and normal morphology in infertile men.

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The therapeutic effects of matrine for MCD-induced NASH are associated with upregulation of HSP72 and suppression of mTOR

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Non-Alcoholic Steatohepatitis (NASH) is an advanced stage of the metabolic syndrome in liver with serious consequences largely because of hepatic injury, inflammation and fibrosis. Matrine (MW: 248) is used as a prescribed hepatoprotective drug in humans and it has been shown by us to decrease hepatosteatosis and glucose intolerance in high fat-fed mice. Here, we investigated whether matrine exerts therapeutic efficacy for NASH by attenuating hepatic injury, inflammation and fibrosis. The study was performed in Methionine Choline-Deficient (MCD) diet-fed mice for 6 weeks with or without the treatment with matrine (100 mg/kg/d). Compared with untreated MCD-fed mice, matrine markedly reduced hepatic injury (indicated by ALT level, p<0.05), inflammation (indicated by TNF α , CD68 and inflammasome NLRP3, all p<0.05). Along with these effects, matrine inhibited MCD-induced increases in fibrogenesis (as indicated by the expression levels of TGF β , Smad3 and type-I collagen (all p<0.05). Further examination revealed that matrine resecured MCD-suppressed Heat Shock Protein 72 (HSP72, a protective chaperon protein against cell toxicity) and inhibited MCD-activated mTOR (a key master regulator triggering pathogenic pathways leading to NASH). Our findings indicate that matrine attenuated MCD-induced NASH by a new mechanism involving the upregulation of HSP72 and inhibition of mTOR. This hepatoprotective drug may be repurposed for the treatment of NASH.

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Sleeve gastrectomy for children and conversion rate

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Background & Aim: The incidence of obesity children is increasing worldwide. Which bariatric procedure is the best for the affected children is still debatable. We observed the results of sleeve gastrectomy and conversion rate for children.

Method: Between 2006 and 2014, we have performed 36 sleeve gastrectomies for children at the age between 8 and 12 years. 34 (94%) were available for follow up between 3-10 years. We collected our data prospectively. Recorded data preoperatively included age, sex, comorbidity, Body Mass Index (BMI). Postoperatively recorded data included intra and post-operative morbidity and mortality, percentage of Excess Weight Loss (%EWL) at 3, 6 and 12 months and then annually up to 10 years postoperatively and the conversion rate to gastric bypass.

Results: Mean BMI preoperative was 47 kg/m², 5 (15%) children of the 34 had Prader-Willi syndrome, weight loss was high in the first 2 years and then started to increase within the first 5 years postoperatively. 10 children had conversion to omega gastric bypass within the first 5 years. All 5 children with Prader-Willi syndrome were converted to omega gastric bypass. After the conversion they started to lose weight. Comorbidity was present before surgery in 30 patients (83%) which has decreased in majority of cases in first 5 years, the remaining 25 patients maintained excess weight loss between 25-52%.

Conclusion: Sleeve gastrectomy for children seems to be less effective than it is known for adults, especially in Prader-Willi syndrome. It could be however a bridging procedure and the omega bypass could be more effective.

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