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EFFECTS OF ONLY PROTEIC DIET WITH AMINO ACID INTEGRATION ON THE BODY COMPOSITION: APPRAISAL BY MEANS OF AIR PLETHYSMOGRAPHY (BOD POD)

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Aim: we wanted to estimate the effect of an Only Proteic Diet with Amino Acid integration on the Body Composition in 20 female subjects, of an age between 20 and 45 years and BMI between 23 and 43. The patients have been exposed to appraisal of the Body Composition by means of Air Plethysmography and then they have been fed with only proteic diet (Proteins = 1.2 gr/Kg of Ideal Body Weight for day) for 15 days. Half of such requirements was eat as proteic food (meat and/or fish) and half as Amino Acid (Amin 21K - Italfarmacia). After 15 days of Only Proteic Diet the patients has been newly exposed to appraisal of the Body Composition by means of Air Plethysmography. **Results:** in all patients we observed reduction of the Body Weight with average of 4.45 Kg (± 1.21). The weight reduction has been due mostly to the loss of Fat Mass with average of 3.36 Kg (± 1.1). In 15 subjects we have found a reduction of Lean Mass of 1.66 Kg (± 1.12). In 5 subjects (25% of the examined pattern) we have found an increase of the Lean Mass of 1.2 Kg (± 1.13). **Conclusions:** such type of dietetic approach (only proteic food with amino acid integration) has been effective in the short time for a weight reduction that it mostly concerned to the compartment of the Fat Mass.

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PROINFLAMMATORY STATE AND HYPOADIPONECTINEMIA ARE RELATED TO THE REDUCTION OF HIGH MOLECULAR WEIGHT ADIPONECTIN IN PREPUBERTAL OBESE CHILDREN

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Context: Accumulating evidence indicates that obesity-linked hypo adiponectinemia is characterized by a preferential reduction of the high molecular weight (HMW) adiponectin (Adpn) complexes. Testosterone and insulin were recently indicated as selective inhibitors of the HMW Adpn, explaining the lower HMW levels of males in adulthood. **Aims:** In this cross-sectional study we aimed: 1) to evaluate whether a sex dimorphism of HMW Adpn characterizes obesity in prepubertal children; 2) to determine the pattern of low-grade immune activation at this pubertal age; 3) to investigate the associations between adiponectin, low-grade inflammation and measures of obesity/insulin resistance. **Methods:** Participants included 305 outpatients prepubertal children (age 9 ± 0.5 yr), divided in 3 groups according to the BMI z-score: lean (L; n=105; M/F:59/46), overweight (OW; n=60; M/F:32/28) and obese (OB; n=140; M/F:70/70). Total and HMW serum Adpn were evaluated using RJA and a novel ELISA assay (ALPCO Diagnostics), respectively. Inflammatory markers were measured by a bead-based multiplexed bioassay (Luminex¹⁰⁰). **Results:** In both the OB and OW subjects total and HMW Adpn were lower than in L despite the similar testosterone levels, and in all the groups adiponectinemia did not differ between the sex. When compared with L, OB boys and girls presented elevated concentrations of leptin ($p<0.0001$), IL-8 ($p<0.01$), MCP-1 ($p<0.0001$), RANTES ($p<0.01$) and ICAM-1 ($p<0.05$). Also, MIF levels were higher in OB than in OW subjects ($p<0.05$). In contrast, IL-18, resistin and IP-10 concentrations were similar across the groups and the sex. HMW Adpn was inversely associated with BMI z-score ($p<0.0001$), HOMA-IR ($p<0.01$) and fasting insulin ($p<0.0001$), which best predicted the HMW Adpn variance. Finally, HMW exhibited an inverse association with IL-8 ($p<0.05$), leptin ($p<0.01$) and ICAM-1 ($p<0.05$). **Conclusions:** The lack of HMW adiponectin sexual dimorphism in prepubertal stage implicates the obesity-linked HMW downregulation as a consequence of hyperinsulinemia/insulin-resistance and systemic inflammation. Finally, high BMI and WHR are associated with a differential pattern of low-grade immune activation.

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ARTERIAL STIFFNESS, INTIMA-MEDIA THICKNESS AND FIBROSIS OF CAROTID ARTERIES IN PATIENTS WITH PRIMARY ALDOSTERONISM

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To evaluate the vascular wall structure and stiffness of conduit arteries of patients with primary aldosteronism (PA), an observational study was conducted in a University Hypertension Centre. Carotid wall by 2-D ultrasonography and ultrasonic tissue characterization, and arterial stiffness by applanation tonometer (Sphygmocor) were investigated. Twenty-three consecutive patients with PA, 24 matched patients with essential hypertension (EH) and 15 controls (C) were studied. Intimal media thickness (IMT) and corrected integrated backscatter signal (C-IBS, marker of collagen deposition and fibrosis) of carotid arteries were evaluated. Radial and femoral pulse wave velocity (PWV) and aortic augmentation index (AIx/75) were also analyzed. IMT in EH was higher ($p<0.04$) than in C. This finding was more evident in PA patients, in whom IMT was greater not only than in C ($P<0.0001$) but also than in EH ($P<0.01$). Similarly, C-IBS in EH was higher ($P<0.0001$) than in C, but it was found to be even more elevated in patients with PA in whom C-IBS proved to be greater than in EH ($P<0.009$) and in C ($P<0.0001$). Femoral PWV was higher in PA patients than in EH ($P<0.03$) or in C ($P<0.0001$). Femoral PWV was lower in C than in EH ($P<0.0001$). The same pattern of response was observed for radial PWV. AIx/75R was found to be higher in PA patients than in EH or in C ($P<0.001$). EH likewise exhibited higher AIx/75R than C ($P<0.001$). In conclusion, our results show that arterial hypertension associated with chronic aldosterone excess induces vascular alterations to a greater extent than comparable hypertension with normal aldosterone levels. This damage involves wall thickening and increased collagen deposition with vascular fibrosis of carotid arteries and central arterial stiffness. The present data thus demonstrate that in humans aldosterone per se is responsible for vascular morphological and functional damage, which may explain the elevated cardiovascular risk of patients with PA.

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ROLE OF ADRENAL GLAND SCINTIGRAPHY IN PATIENT WITH SUBCLINICAL HYPERCORTISOLISM AND INCIDENTALLY DISCOVERED ADRENAL MASS

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Introduction. The diagnosis of subclinical hypercortisolism (SH) in patients with incidentally discovered adrenal masses (AI) is controversial, due to the fluctuation of cortisol secretion in these patients. Since SH has been suggested to be associated with significant morbidity, its presence may address the treatment of choice in AI patients. In overt cortisol excess adrenal scintigraphy (AS) represents a helpful method to detect adrenal autonomy, while in SH patients its role is debated. We evaluated AS in AI patients with and without SH. **Subjects and Methods.** Forty-two patients (10M/32F, age 63.2 ± 7.5 yrs) with unilateral AI were retrospectively evaluated by: i) anthropometric measurement (BMI); ii) mean of at least three determination of plasmatic ACTH levels, serum cortisol levels at 9.00 A.M. after a 1-mg overnight dexamethasone suppression test (F-Dex) and 24-h urinary free cortisol (UFC). Patients were classified as SH+ (n=27) and SH- (n=15) on the basis of presence of 2 criteria out of the following: UFC >193.1 nmol/L, F-Dex >82.8 nmol/L, ACTH levels <2.2 pmol/L. Adrenal scintigraphy was performed using I-131-cholesterol 37 MBq and the uptake of adrenal glands 4, 7 and 11 days after i.v. injection was evaluated. We calculated the percentage difference between the uptake of the affected adrenal gland and the normal one at different days and expressed it as average (Mean Δ uptake, M Δ u). **Results.** Age and BMI were comparable between SH+ and SH- patients, while the size of the mass (3.4 ± 1.2 vs 2.6 ± 1.1 cm, $P=0.02$, respectively) and M Δ u (83.7 ± 12.5 vs $54.7\pm 24.1\%$, $P<0.001$, respectively) were significantly higher in the former. The multivariate analyses showed that M Δ u was correlated directly with UFC ($\beta=0.387$, $P=0.015$) and with SH (OR 1.12, 95%CI 1.03-1.22) after adjustment for age, BMI and size of adenoma. ROC curve analysis showed that 76.2% M Δ u cut-off has 93.7% specificity and 74.1% sensibility in the identification of SH. **Conclusions.** AS may be useful in confirming the presence of a subtle cortisol excess in AI patients with unclear biochemical diagnosis of SH.

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P101 - Gli effetti di una dieta solamente proteica con l'integrazione di aminoacidi sulla composizione corporea

Valutazione mediante tecnica di pletismografia ad aria (BOD POD)

Scopo: ci siamo proposti di valutare l'effetto di una dieta interamente proteica integrata con aminoacidi sulla struttura corporea in 20 pazienti femminili, di età compresa da 20 a 45 anni. Le pazienti sono state sottoposte alla valutazione della Composizione corporea tramite pletismografia ad aria e in seguito sono state nutrite con una dieta unicamente proteica (proteine = 1,2 gr/Kg del peso corporeo ideale) per 15 giorni. La metà di questi valori è stata soddisfatta con alimenti proteici (carne e/o pesce) e una metà con aminoacidi (**Amin 21 K - Italfarmacia**). Dopo 15 giorni di dieta con sole proteine le pazienti sono state nuovamente sottoposte alla valutazione della composizione corporea mediante pletismografia ad aria.

Risultati: in tutte le pazienti è stata osservata una riduzione del peso corporeo con una media di 4,45 kg ($\pm 1,21$). La riduzione del peso è dovuta prevalentemente alla perdita della massa grassa con una media di 3,36 kg ($\pm 1,11$). In 15 soggetti abbiamo scoperto una perdita di massa muscolare di 1,66 kg ($\pm 1,12$). In 5 soggetti (25% del campione esaminato) abbiamo trovato un aumento della massa muscolare di 1,2 kg ($\pm 1,13$).

Conclusioni: questo tipo di criterio dietetico (soltanto alimentazione proteica con l'integrazione di aminoacidi) è stato efficace per una riduzione di peso in un periodo breve soprattutto per quanto riguarda il settore della massa grassa.