

Frequency of Obesity among Students of ISRA University Hyderabad

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ABSTRACT

Study design: Descriptive study (Analytic Study). **Purpose of study:** To assess the frequency of obesity among students of ISRA University Hyderabad. Study place: ISRA University Hyderabad. **Study duration:** March- June 2006 **Methodology:** Students of Isra University belong to whole Pakistan including all four provinces. Students in study were undergraduate students. **Results:** 168 students participated in this study. Eighty two [48.8%] were males and eighty six [51.2%] were females. Out of 168 students, 146 [86.9%] had normal Body Mass Index [16 to 25], while 16 [9.5%] had Body Mass Index between [25 to 30] and considered overweight. 6 [3.6%] students had body mass index between [30 to 40] and considered obese.

Key words: Obesity, students

INTRODUCTION

Obesity is a complex multifaceted condition that develops from the interaction of genetic, cultural, social, behavioral physiologic, metabolic and molecular infection. If you are overweight or obese, this extra weight puts you at risk for developing many diseases, especially heart disease, stroke, diabetes, and cancer. Losing this weight help to prevent and control these diseases Women generally have more subcutaneous fat than men, but men appear to suffer a greater cardiovascular risk than women¹. The distribution of body fat may be an indicator of this difference. Men accumulate more fat cells in the abdominal region than women (high waist-to-hip ratio). This distribution around the abdomen, referred to as upper body obesity, is associated with increased cardiovascular risk factors. Lower body obesity is more typical in women, who tend to accumulate fat in the hips, gluteal regions, and extremities². Environmental factors are important, there is considerable evidence that genes also have a significant role in its pathogenesis³. The prevalence of overweight and obesity is increasing worldwide. During the last two decades, the prevalence of adults in the higher body mass index (BMI) categories in the US has increased the most, as much as 300% for those with a BMI above 40kg/m²⁴. In some individuals with eating disorders, certain chemicals in the brain that control hunger, appetite and digestion have been found to be imbalanced. The exact mechanism remains under investigation⁵. The significantly higher percentage of adipose tissue in the adenovirus 5 - treated mice suggest viral infection

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may play a contributory role to pre-dispose obesity, although its contribution relative to other factors remains to be determined. The epidemic of obesity in the United States has spread at such an alarming rate over the last decade that most adults are now overweight or obese⁶.

SUBJECTS AND METHODS

Students of ISRA University belong to whole Pakistan were included from all four provinces. Students in study were undergraduate students only. Height was recorded in meters and weight was recorded in kilograms. Body mass index was calculated according to equation, (weight in kilograms / square of height in meters). Students were divided into four groups according to Body Mass Index. Body Mass Index (BMI). BMI of 16 to 25 was taken as normal, 25 to 30 was taken as overweight, and > 30 was taken as obese, and > 40 was taken as morbidly obese.

RESULTS

Spectrum of body mass index in male and female students of ISRA University are given in tables 1, 2, 3 and Fig 1.

Table 1: BMI among students of ISRA University (n = 168)

| BMI | =n | %age |
|----------|------|------|
| < 25 | 146 | 86.9 |
| 25 - <30 | 16 | 9.5 |
| ≥ 30 | 06 | 3.6 |
| >40 | Zero | Zero |

Table 2: BMI among male students of ISRA

| BMI | No. (n=82) | %age |
|-----------|------------|-------|
| < 25 | 66 | 80.5% |
| 25 - < 30 | 12 | 14.6% |
| ≥ 30 | 04 | 4.9 % |
| > 40 | Zero | Zero |

Table 3: BMI among female students of ISRA University (n=86)

| BMI | =n | %age |
|-----------|------|------|
| < 25 | 80 | 93% |
| 25 - < 30 | 04 | 4.6% |
| ≥ 30 | 02 | 4.0% |
| > 40 | Zero | Zero |

DISCUSSION

Obesity is largely attributable to an indulgent lifestyle. Biologically we feel hunger more acutely than feeling “full-up” (Satiety). Over one-half of all Americans (about 97 million) are overweight or obese. In this study 16, (9.5%) students were overweight and 06 (3.6%) students were obese. Male students were more overweight (14.6%) as compared to female students (4.6%). Male students were also found to be more obese (5%) as compared to female students (2.1%). Not a single student was found to be morbidly obese. The discovery of leptin, an adiposity signal, revolutionized our understanding of hypothalamic mechanisms underpinning the central control of ingestive behavior. The structure and function of many hypothalamic peptides [Neuropeptide Y (NPY), Melanocortins, Agouti related peptide (AGRP), Cocaine and amphetamine regulated transcript (CART), Melanin concentrating hormone (MCH), Orexins and endocannabinoids] have been characterized in rodent models. The pharmacological potential of several endogenous peripheral peptides released prior to, during and/or after feeding are being explored. Short-term signal hormones including Cholecystokinin (CCK), Ghrelin, peptide YY (PYY) and Glucagon-like peptide1 (GLP-1) control meal size via pathways covering on the hypothalamus. Long-term regulation is provided by the main circulating hormones leptin and insulin. These systems among others, implicated in hypothalamic appetite regulation, provide potential “drugable” targets to treat obesity^{9, 10}

Despite significant reductions in the consumption of dietary fat, the prevalence of obesity is steadily rising in western civilization. Of particular concern is the recent epidemic of childhood obesity, which is expected to increase the incidence of obesity-related disorders. The obese gene (*ob*) protein product leptin is a hormone that is secreted from adiposities and to suppress appetite and increase energy expenditure. Leptin is an attractive candidate for the treatment of obesity as it is an endogenous protein and has been demonstrated to have potent effects on body weight and adiposity in rodents. Whereas leptin has been successfully used in the treatment of leptin-deficient obese patients, trials in hyperleptinemic obese patients have yielded variable results. The adipose tissue-derived hormone leptin is

regulates energy balance and neuroendocrine function. Resistance to the appetite-suppressing effect of leptin associated with common forms of obesity¹¹. Health care professionals should be aware about obesity, because of the well-established relations b/w excess body weight and diseases such as type 2 diabetes, hypertension, atherosclerosis, osteoarthritis, dyslipidemia and cancer, which afflict more and more people in the Western world-sort of “well-being syndromes”¹². Obesity is associated with increased risk of hypertension and heart disease. Leptin has recently been linked to increase the risk of cardiovascular disease. There are two concepts regarding loss of leptin actions. First concept is selective leptin resistance: and concept is loss of leptin action which results in lipid accumulation in skeletal muscle, pancreatic islets cells, and heart thus causing insulin resistance, insulin deficiency and cardiac dysfunction, respectively^{13,14,15}.

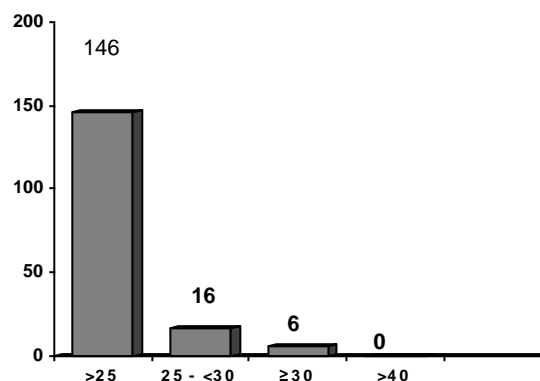


Fig 1 BMI among students of ISRA University

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