MAX HEALTHCARE
Super Speciality Hospital

A Monthly Newletter

Care Plus

From Max Super Speciality Hospital, Bathinda

Vol. 3 Issue I

Department of DIABETES & OBESITY

SPECIAL FACILITIES

- Diabetes OPD Clinic (Daily)
- Diabetes Foot Clinic (Daily)
- Diabetes & Retinopathy Clinic (Daily)
- Diabetes & Kidneys Clinic (Tuesday)
- Type 1 DM & Pregnancy with DM Clinic (Wednesday)
- Obesity Clinic (Thursday)
- Thyroid Clinic (Friday)

OBESITY

(A GRAVE PROBLEM)
TREAT IT LIKE OTHER DISEASES

Dr. Sushil Kotru
Consultant-Diabeties
& Metabolic Disease

By combining the most advanced laboratory diagnostics, imaging systems and healthcare information technology, Max Super Speciality Hospital, Bathinda enables clinicians to diagnose disease earlier and more accurately, making a decisive contribution to improving the quality of healthcare.

OBESITY

It is a major, progressive, chronic & relapsing medical problem & infact basically a complex multifactorial disease of appetite regulation & energy metabolism that involves genetics, physiology, biochemistry, psychological, environmental, & cultural factors.

PREVALENCE

Obesity is emerging as an important health problem in India. 22 million Indians are obese, especially abdominal obese.

The Nutrition Foundation of India (NFI) showed that 32.3% of middle class males & 50% of middle class females are obese in India.

HOW DO WE MEASURE OBESITY?

It has been traditional to define obesity in terms of a particular individual's body mass index (BMI). BMI= wt in Kgs / (ht. in mts.) ^{2}

BMI Table

	Asia Pacific Guildline	WHO Guildline
Normal Built	18-23	21-25
Overweight	23-27.5	25-30
Obesity	27-37.5	30-40
Morbidly Obese	>37.5	>40

CAUSES

Obesity is a multifactorial condition. Factors playing a role in eating & weight control include genetic, cultural, socioeconomic, behavioral, situational, metabolic & physiological.

Thus, when energy expenditure is less than energy intake, there wil be weight gain.

a) Endocrine causes like hypothyroidism, Cushing's disease, hypogonadism, insulinoma.

b) Hypothalamic causes like tumors, damage by infection or irradiation etc.

c) Drugs like anabolic agents, steroids, oral contraceptives, sulphonylureas(antidiabetic drug), tricyclic antidepressants, lithium etc.

d) Sociocultural factors like women with no educational qualification show a mean BMI of 26.7 kg/m ^{2}

e) Behavioral change factors like declining physical activity has been matched by the adoption of increasing sedentary lifestyles.

- Increasing use of motorized transport
- Energy sparing domestic devices
- Lifts & escalators
- Obsessive TV watching
- Video games
- Overuse of central heating
- Diet including high fat diets & frequent snacks contribute to Obesity because they reduce the conscious recognition that food is being eaten

OBESITY IS A HEALTH RISK

Obesity is an independent risk factor for increased mortality. Overall mortality begins to increase with BMI levels greater than 25 & increases most dramatically as BMI levels surpass 30. Risk of Obesity are parallel to hypertension & dyslipidemias. BMI greater than 35 is associated with a seven fold increase in mortalty risk in coronary patients. Equally strong association are well documented with degenerative joint disorders, depression, sexual dysfunction in both genders.

COMORBID CONDITIONS

In addition to having a marked effect on mortality, Obesity also has a major impact on morbidity on various systems.

IMPACT OF OBESITY ON MORBIDITY

Various systems	Comorbid conditions
Type 2 Diabetes Mellitus	Hyperinsulinism/ insulin resistance
Dyslipidemia (high triglycerides & low HDL cholesterol)	Hypertension, coronary heart diseases, Cerebrovascular diseases, deep vein thrombosis
Gastrointestinal system	Hiatus hernia, cholelithiasis, fatty infiltration of the liver, hemorrhoids, hernia, gastrooesophageal reflux disease, colorectal cancer
Respiratory	Obstructive sleep apnoea, restrictive lung disease
Breast	Breast cancer
Uterus	Endometrial cancers, cervical cancers, gynaecological abnormalities
Skin	Fungal infections, intertrigo, cellulitis, lymphoedema
Urological	Stress incontinence

STEP BY STEP RECOMMENDATION

For adult weight loss therapy or Management of Obesity

Goals

The first attempt is to reduce body weight by approximately 10% from baseline. Further weight loss if indicated, through further assessment is attempted only after success is achieved with the first goal.

The patient is advised to attempt to reduce weight at a rate of about ½- 1 kg per week for first 6 months.

Regular follow up with alteration in strategies is based on the amount of weight loss by the patient

Dietary therapy

The patient is advised about low calorie diets with advice been imparted by a trained dietician if possible. Fat reduction is a practical way to reduce calories & hence the patient needs to follow this. Total calories reduction of dietary carbohydrates & fat will help in better caloric reduction. The patient shold aim to create a calorie deficit of 500-1000 kcal per day.

Physical Activity

EXERCISE PLAYS AN IMPORTANT ROLE BY COMTRIBUTING directly to weight loss and also plays a very important role in weight maintanence, post weight loss. Physical activity increases cardio-respiratory fitness & reduces body fat. Physical activity needs to be an integral part of weight loss therapy & weight maintainence & patient can not overlook this. The patient needs to plan moderate levels of activity like brisk walking at least 30-40 minutes per day initially for 5 days/week & slowly work upto everyday of the week. The patient should be encouraged for increasing the intensity of the physical activity slowly.

Behavioral therapy

Behaviour therapy is a useful adjunct to diet & physical activity. The physician needs to assess patient motivation & readiness to implement the weight management plan & the commitment for the same. The patient should be encouraged to plan small steps at a time with periodic non foods rewards being incorporated for self encouragement.

Combined Therapy

The patient needs to have clear guideline that adequate weight loss is possible only with a combination therapy of low calorie diets, increased physical activity & behavior therapy.

Pharmacotherapy

Lifestyle therapy is essential before the patient can be considered for drug therapy. Weight loss drugs may be used in patients with BMI>30kg/m ^{2} with no accompanying obesity- related risk factors or diseases. The patient needs to be monitored continuously for drug efficacy & safety. Any drug being used needs to be discontinued if the drug is ineffective in weight loss or weight maintenance or if there are serious adverse effects. Maximum benefits of pharmacotherapy can be expected in the first 6 months in terms of weight loss & these drugs can be continued for a longer period as per their approval for weight management.

Bariatric Surgery

Bariatric Surgery is a treatment option. Weight loss surgery is an option in carefully selected patients with clinically severe obesity i.e. persons with a BMI> 40kg/m ^{2} or with a BMI >35kg/m ^{2} with comorbid conditions like Type 2 DM, obstructive sleep apnoea etc . Surgery should be considered when less invasive methods have failed and the patient is at high risk for obesity related morbidity & mortality.

Diabetic Foot Care

Dr. Bharat Kotru
(Podiatry)

Human foot is a mechanical marvel. Each foot consists of 29 joints, 26bones and 42muscles. In life time this phenomenal machine walks between 75,000 to 1, 00,000 miles. A distance equivalent to 3 to 4 times around the world and is exposed to significant pressures with each step. India is considered as a capital of diabetes. One of the most deadly complications of diabetes is diabetic foot infection which starts from diabetic foot ulcer and develops because of poor foot care. India has 62 million diabetic patients. Foot ulcers and amputations are a major cause of morbidity, disability, as well as emotional and physical costs for people with diabetes. Early recognition and management of independent risk factors for ulcers and amputations can prevent or delay the onset of adverse outcomes. This position statement provides recommendations for people who currently have no foot ulcers, and outlines the best means to identify and manage risk factors before a foot ulcer occurs or an amputation becomes imminent. Diabetic foot ulcer is a major complication of diabetes mellitus, and probably the major component of the diabetic foot. It occurs in 15% of all patients with diabetes and precedes 84% of all lower leg amputations. Major increase in mortality among diabetic patients, observed over the past 20 years is considered to be due to the development of macro and micro vascular complications, including failure of the wound healing process. Wound healing is an innate mechanism of action that works reliably most of the time. A key feature of wound healing is stepwise repair of lost extracellular matrix (ECM) that forms the largest component of the dermal skin layer. Controlled and accurate rebuilding is essential to avoid under- or over-healing that may lead to various abnormalities. But in some cases, certain disorders or physiological insult disturbs the wound healing process. Diabetes mellitus is one such metabolic disorder that impedes the normal steps of the wound healing process. Many histopathological studies show a prolonged inflammatory phase in diabetic wounds, which cause a delay in the formation of mature granulation tissue and a parallel reduction in wound tensile strength.

The risk of ulcers or amputations is increased in people who have had diabetes >10 years, are male, have poor glucose control, or have cardiovascular, retinal, or renal complications. The following foot-related risk conditions are associated with an increased risk of amputation: -Peripheral neuropathy with loss of protective sensation , Altered biomechanics (in the presence of neuropathy)- Evidence of increased pressure (erythema, hemorrhage under a callus), Bony deformity , Peripheral vascular disease (decreased or absent pedal pulses) , A history of ulcers or amputation , Severe nail pathology.

Steps to prevent diabetic foot ulcers include frequent chiropody review, good foot hygiene, diabetic socks and shoes, as well as avoiding injury. Foot-care education combined with increased surveillance can reduce the incidence of serious foot lesions. All individuals with diabetes should receive an annual foot examination to identify high-risk foot conditions. The general techniques of foot analysis are:- 10 gm monofilament, 28 Hz tuning fork , Vpt., Hcp , Foot doppler for ABI Index , Harris mat pressure measurements , Gait analysis 3D scan , IR gun for temperature difference measurements. People with one or more high-risk foot conditions should be evaluated more frequently for the development of additional risk factors. People with neuropathy should have a visual inspection of their feet at every visit with a health care professional. The skin should be assessed for integrity, specially between the toes and under the metatarsal heads. The presence of erythema, warmth, or callus formation may indicate areas of tissue damage with impending breakdown. Bony deformities, limitation in joint mobility, and problems with gait and balance should be assessed.

People with neuropathy or evidence of increased plantar pressure may be adequately managed with well-fitted walking shoes or athletic shoes. Patients should be educated on the implications of sensory loss and the ways to substitute other sensory modalities (hand palpation, visual inspection) for surveillance of early problems. People with evidence of increased plantar pressure (e.g., erythema, warmth, callus, or measured pressure) should use footwear that cushions and redistributes the pressure. Callus can be debrided with a scalpel by a foot care specialist or other health professional with experience and training in foot care. People with bony deformities (e.g., hammertoes, prominent metatarsal heads, bunions) may need extra-wide shoes or depth shoes. People with extreme bony deformities (e.g., Charcot's foot) that cannot be accommodated with commercial therapeutic footwear may need custom-molded shoes. Proper fitting footwear must be used for all weight bearing activities. Avoid walking in bare feet or slippers A prescription for footwear may be required and should include the diagnosis and risk category . Footwear must be functional and should include the following characteristics:- match the shape of the foot, have a removable insole, have visible means of closure such as laces, Velcro, have an adequate toe box to accommodate forefoot shape and deformities, have a broad sole to provide sufficient stability, have easily modifiable upper and sole material , have upper material made of leather or comparable material to allow, for breathability, durability and mould ability, have a smooth protective lining , have a shock absorbent midsole with adequate thickness for protection, have a heel height (difference between rearfoot and forefoot at breast of the shoe) that does not exceed one inch, should not allow movement of the foot inside the shoe.

There are six aspects of managing diabetic foot:

Mechanical control, Metabolic control, Microbiological control , Vascular control, Wound control , Educational control.

A planned and multidisciplinary educational approach enabled high compliance of ulcer prevention care needed in patients at risk for diabetic foot complications.Careful review of the footwear provided at our service and further new analysis of its acceptability are most required. In countries of such vast dimensions multidisciplinary educational approaches can and should be performed by the services providing care for diabetic patients at risk for complications, respecting the reality of local scenarios. Furthermore, every educational program should assess the learning, results and efficacy in the target population with an adequate evaluation system. Solution is probably in prevention.

Most feet can be spared...at least for a while

Care Plus

SPECIALITIES:

- Cardiology & Cardiothoracic Surgery
- Orthopaedics & Knee/Hip Replacement
- Medical & Surgical oncology
- Radiotherapy
- Neurology & Neurosurgery
- Gastroenterology
- Obstetrics & Gynecology
- Paediatrics
- Ophthalmology
- ENT
- Dermatology
- Nephrology
- Internal Medicine
- Gen. & Laparoscopic Surgery
- Diabetes & Obesity Care
- Radiology
- Urology
- Nuclear Medicine
- Dietetics
- Physiotherapy
- Critical Care
- Lab Medicine & Transfusion Services (24 hours blood Bank)
- 24x7 Max Chemist

EMPANELLED WITH:

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