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## Chirbilva- A Traditional Medicinal Plant and Its Role in Obesity

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### ABSTRACT

Now in 21<sup>st</sup> century, the life style and environmental condition have tremendously changed, so people are deviated from natural life style. In this fast life style stress at work plane and lack of exercise as well as bad habit of eating junk food cause obesity. Obesity is one such grave disorder causing potential harm to humanity the proportion of obese or overweight people in India has almost double in the last 10-year, data from the 4<sup>th</sup> national family health survey (NFHS) show 39.3 Indians are overweight many more medicinal plants is one of them are described in Indian system of medicine to treat obesity, chirbilva a traditional medicinal plant is one of them which is very useful to treat obesity

**Keywords:** Ayurveda, Indian System of Medicine, Obesity and Medicinal Plant.

### Introduction

Obesity is an increasing problem in the developed world has substantial health effect. In The United Kingdom, 50% of the adult population are overweight (BMI 25-29.9) AND 20% are obese (BMI >30). FAT Deposition results from the discrepancy between energy consumption and expenditure. A small excess consumption only 50-200 kcal daily will lead to a weight gain of 2-20kg over a period of 4-10 years.

The etiology of obesity arises from specific causal factors i.e. Endocrine factor (hypothyroidism, crushing's syndrome) hypothalamic tumor or injury insulinoma) drug treatment (tricyclic anti or injuriy insulinoma) drug treatments (tricyclic antidepressants, sulphonylurea, oral contraceptive pill cardio steroids and sodium valproate) and genetic causes.

However, for the most part the etiology of obesity arises from a complex interplay of behaviors like sedentary life style consumptions of high fat, dense energy food and alcohol etc.

Obesity has much medical complication like type 2 diabetes, hypertension, stroke hyperlipidaemia, gallstones, and obstructive sleep apnoea etc

BMI (body mass index) is calculated by the person, shight in meters squared (Kg/m) the internationally accepted range of BMI IN ADULT IS AS-

- Underweight <18.5
- Normal < 18.5 -24.9
- Overweight <25.0-29.9
- Abase -30.0 -39.9
- Extremely abase ->40

## MEDICINAL PLANT (CHIRBILVA)

Chirbilva, holopteleintegrifalia (ROXB) PLANT May be accepted in Indian system of medicine under the name putikaranja. It is a tree which grows to a height of 20 m bearing light yellow flowers .it is found in many parts of the wintry including Himalayan ranges the useful parts of this plants are –bark leaf, seed and heartwood.

## CHEMICAL CONSTITUENTS

Preliminary phytochemical investigations as stem bark of ethanol extract of holoptelia in to grefalia revealed the presence of alkaloids, Flavonoids, tannins, spooning, glycosides and phenols 2-triterpenoids – fatty acid esters holoptelia –A, B 2-Amino naphthaquinone; friediline, epifriedelinol beta sitosterol and stigmasteral etc

## PHARMACOLOGICAL ACTIVITY

In vivo and in vitro pharmacological investigation crude drug extract and isolated compounds shows anti bacterial antifungal, analgesic, antioxidant, anti-inflammatory, anti-helminths, anti-diabetic, anti-diarrheal, apoptogenic, anticancer, wound healing hepatoprotective, hypolipidemic activities the fecal analysis indicates the ability

## OBESITY AND ITS ASSOCIATED RISKS

Obesity, especially central obesity is an important risk factor for the “metabolic syndrome “(syndrome X), the clustering of predispose for cardiovascular disease. most of the complications are given as – cardiovascular: hypertension, hyperlipidemia atherosclerosis congestive heart failure, varicose veins, pulmonary embolism etc. Endocrine: diabetes mellitus, polycystic ovarian syndrome (PCOS), menstrual disorders and infertility. Gastrointestinal: gastro esophageal reflux disease fatty liver disease, cholelithiasis (gall stone), hernia and colorectal cancer. Renal and genitourinary: erectile dysfunction chronic renal failure, hypogonadism (male), breast cancer uterine cancer (female) and stillbirth. Skin and appendages: stretch marks, acanthosis magicians, cellulitis. Neurological: stroke neuralgia, carpal tunnel syndrome, dementia. Respiratory: Dyspnea, abstractive sleep apnea asthma etc. Psychological: depression, dimorphic disorder extract to prevent intestinal fat absorption extract possesses a compound 3-(7-ethoxy-4-methyl -2-oxo-2H-chromen -3-yl) propanoatical which might have inhibited HMGR activity, thus blocked intestinal fat absorption

## TREATMENT REVIEW OF OBESITY

Weight control is widely defined as approaches to maintaining weight within the healthy (i.e. normal or acceptable) range of body mass index of 18.5 to 24.8 kg/m throughout adulthood (WHO EXPERT COMMIHEL ,1995).in a clinical practice guideline by the America college of physicians, the following five recommendations are made: people with a BMI of over 30 should be counseled a diet, excrcise and other relevant behavioral interventions. If these goals are not achieved, pharmacotherapy can be offered. The patient needs to be informed of the possibility of side effect and UN availability of long-term safety and efficacy data. Drug therapy may consist of sibutramine, orlistat, pheritermine, diethhylpropione, fluxetine and bupropion. For more severe cases of obesity, stronger drugs such as amphetamine and methamphetamine may be used a selective basis. And methamphetamine may be used a selective basis. Evidence is not sufficient to recommend sertraline, topiramate zonisamide.

In patient with BMI >40 Who fail to achieve their weight loss goals with or without medication) and who develop obesity related complication, referral for bariatric surgery may be indicated those requiring bariatric surgery should be referred to high volume referral centers as evidence suggests that surgeon who frequently perform these procedures have fewer complications

The strategy for treatment of obesity includes five phases

- Patient counseling
- Dietary management
- Exercise therapy
- Pharmaco therapy
- Weight loss therapy

### **PATIENT COUNSELLING**

This phase is most important of an obese person. Detail knowledge of the disease and its complication need to be given to the obese person. emphasis must be put on to reduce the fat instead of to lose weight .the patient must be convinced that primary goal of treatment is to lose weight .the patient must be convinced that primary goal of treatment is to loss body fat while maintaining muscle or lean body mass

### **DIETARY MANAGEMENT**

Diet plays a vital role in the prevalence of obesity .it is believed that over nutrition of any stage during the life span increases the fat cell size. Normal diet contains –protein -50 gm. fat 20 gm carbohydrate -100gm supplement of vitamins A AND C, Minerals like magnesium and calcium salts, fluid 2 liter etc.

### **PLANNED DIET RULES**

Eat only when you are hungry

Diet should be containing liberal amount of salad, fresh fruit.

Vegetables and dietary fibers.

Try to maintain 800-1000 Kcal per day for female and male respectively, day required calorie should not be less than 500 kcal

### **EXERCISE THERAPY**

exercise is efforts to lose weight because it increases energy expenditure and plays an integral role in weight maintenance exercise into the morning is suggested for keeping metabolism higher for whole day. Patient should be emphasized to start with light exercise it and then maintain it regularly.

### **ADVANTAGE OF EXERCISE**

It improves physical work capacity

It accelerates the rate of weight loss

It affects body composition by increasing the loss of adipose tissue and minimizing the amount of body cell mass.

It decreases serum triglyceride level

It increases serum HDL Cholesterol

## PHARMACO THERAPY

There are four general classes of anti –obesity drug

Inhibition of energy intake

Inhibition of fat absorption

Enhancers of energy expenditure

Stimulators of fat mobilization

## EXAMPLES OF SAME FDA APPROVED DRUGS

Orlistat

Phentermine

Sibutramine

## WEIGHT LOSS SURGERY-

Surgery is an option for well informed and motivated patients who are having severe obesity BMI>40 OR BMI >35 with complicated conditions

## CONCLUSION

Now in 21<sup>st</sup> Century ,the life style and environmental condition has tremendously changed so, people are deviated from natural life style obesity is one such grave disorder causing potential harm to humanity .to aware the people about this disease ,world obesity day is celebrated on 11<sup>th</sup> October every year .obesity is an impotent risk factor for metabolic syndrome that heavily predispose for cardiovascular disease .there are two main aims to manage obesity first to reduce weight and second prevention of further weight gain .there are five basis phases –patient counseling dietary management ,exercise therapy . pharmacotherapy and weight loss surgery .Pharmatherapy has some limitation with high cost and side effects ,in this circumstances ,medicinal plant s exercises and yoga etc can play important role .Chirbilva a traditionally used medicinal plant has the property to reduce weight with causing any side effect , a research work entitled “characterization of Chirbilva (holoptelia into grefalia plant ) and its role in management of obesity” was done by Dr Vinay kumar Verma under obesity under the supervision of Prof. K.N Dwivedi and Prof. B. Ram found significant role in obesity and also has the lipid reducing property.

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