INFLUENCE OF GUAR ON SERUM CHOLESTEROL

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ABSTRACT
Guar is the ground endosperms of cyamopsis tetragonolobus (L). It belongs to the family Leguminosae. The plant is cultivated in dry climate in India, Pakistan, USA. Guar gum is pale yellow free flowering powder, completely soluble in cold and hot water insoluble in oils. Guar gum is used as thickening agent, tablet binder and disintegrator. Guar gum is used to decrease serum cholesterol. Guar as cooked vegetable was given to the patients of 40-60 years age groups both male and female; the groups were divided into 10 patients in sub groups as A1, A2, B1, B2. Guar legumes weighing 30G were given to patient as cooked dish daily for 30 days along with the normal diet. Before start of guar and after, serum Cholesterol level was estimated. Only those patients were recorded who had raised cholesterol above normal. In A1 group serum Cholesterol before treatment was 262 ± 8.03 the same decreased to 229 ± 8.51 with P<0.5 in group A2 before treatment serum Cholesterol was 221 ± 5.3 and after 30 days treatment it was 206 ± 4.6 mg per deciliter with P<0.5. In group B1, female serum Cholesterol was 270 ± 8.1 the same decreased as 246 ± 9.3 with P<.05, in group B2 serum Cholesterol was 235 ± 8.6 and the same decreased to 212 ± 7 with P<0.05. From many studies it was found that guar has the quality of lowering serum Cholesterol. It can be concluded that daily use of guar can influence serum Cholesterol.

Keywords: Guar Serum Cholesterol.

INTRODUCTION
Guar is the ground endosperms of cyamopsis tetragonolobus (L).

It belongs to the family Leguminosae. The plant is cultivated in dry climates in India, Pakistan U.S.A. It is robust erect annual 1-3 inch high plant bearing cluster of thick and fleshy pods. The plant is hardy and drought resistant.

Guar gum is a pale yellow free flowering powder completely soluble in cold and hot water, practically insoluble in oils. Guar gum is used as thickening agent as a tablet binder and distintegrator. Used as a protective colloidal stabilizer, thickening and film-forming agent for cheese, salad dressings, ice creams, soups. It is used in Pharmaceutical Jelly formulations; in suspension, emulsions, lotions, creams, toothpastes in the mining industry as a flocculent, as a filtering agent and in water as a coagulant aid (Mohammad Ali, 2004).

The Principal constituent of the gum is a galactomannan which as hydrolysis gives galactose and manose. It is available as oral hypoglycaemic agent. Guar also lowers Cholesterol levels possibly by binding bile salts in the gut (W.C. Evans, 2002). Guar gum, psyllium and oat bran exhibited viscous characteristics through out small intestinal simulation indicating potential for these fibres to elicit blood glucose and lipid attenuation (Dikeman et al., 2006). Guar gum is also useful in treatment of irritable bowel syndrome (Giannini et al., 2006). Viscous fibres such as guar, glucomannans, pectins, oat beta-
and psyllium continue to be seen as hypocholesterolemic (Jenkins et al., 2000).

Patients with intrahepatic, Cholestasis of pregnancy were given guar gum, it relieved the intensity of pruritus without any side effects and prevented the rise in serum bile acid concentration in placebo controlled and randomized controlled trial (Rickonen et al., 2000).

According to assessment study the authors concluded that the product containing soluble fibre (Minolest) had small impact on the lipid profile and may be useful only in subjects with mild hypercholesterolaemia and a low risk of coronary artery disease (Tai et al., 1999).

The dietary fibers, e.g., Cereal, fruit, vegetable or legume or as supplement. An increasing number of observational findings have reported a lower incidence of coronary heart diseases in subjects who report consuming diets high in fiber (Erkkila, 2006).

It was found that partially hydrolyzed guar gum was effective for improving somatic (gastrointestinal symptoms) and the improvement tended to decrease after the end of treatment (Parisi et al., 2005). A first case has been reported having developed immediate hypersensitivity. Despite the common use of guar as versatile food additive or gelling agent this was the first case of immediate hypersensitivity (Roesch, 2005) on local contact in an anaesthetic. Partially hydrolyzed guar gum is good choice in clinical nutrition practice (Slavin and Greenberg, 2003). A met analysis suggests that guar gum is not efficacious for reducing body weight. Considering the adverse events associated with its use the risks of taking guar gum outweigh its benefits for this indication therefore guar gum can not be recommended as a treatment for lowering body weight (Pittler and Ernst, 2001). Three workers engaged in the manufacture of natural thickener products (Cassia spp, guar and tamarind flour) were occupationally sensitized to cassia spp. Dust exposure to flours may not only cause allergic sensitization but also induce Chronic changes in lung functions (Stequer et al., 2000).

SUBJECTS AND METHODS

Guar a cooked vegetable was given to forty patients from the age group of 40-60 males and females, who were suffering from hypercholesterolaemia. The patients were divided into groups according to sex and age. The study was conducted at author’s clinic Table-1.

Guar legumes weighing 30G were given to the patient as a cooked dish supplementing to their normal diet daily for thirty days. The investigations regarding serum Cholesterol were done before the start of treatment and also after one month of taking guar only those patients were recorded who had raised cholesterol level above normal.

Results: Table 2 Males

In age group (40-50) serum Cholesterol before treatment was $262 \pm 8.51$ mg / dl with $P<0.05$ in age group (51-60) serum Cholesterol before treatment was $221 \pm 5.3$ which reduced to $206 \pm 4.6$ with $P<0.05$.

Table 3: Females

In age group (40-50) serum Cholesterol before treatment was $270 \pm 8.1$ / dl which, reduced to $246 \pm 9.3$ / dL $P<0.05$. In age group (51-60) serum Cholesterol before treatment was $235 \pm 8.6$ / dL and the same decreased to $212 \pm 7.0$ / dL with $P<0.05$.

DISCUSSION

The dietary habits of the individuals are important in maintaining weight and serum cholesterol level the diet containing fibres is quite helpful in maintaining the lipid profile of an individual.

According to the study performed by the authors in the male and female both groups the level fell down after intake of guar with normal diet in all groups there has been decrease in serum Cholesterol after 30 days
use of guar in diet. According to studies performed by Brown et al (1999) they declared that various soluble fibers reduce total and LDL Cholesterol the effect was small within the practical range. According to our study there is contribution of guar in lowering serum Cholesterol. Our study tunes with the study performed by Jensen et al (1997) in which they concluded that water soluble dietary food has an approach to Cholesterol management as an adjunct to a fat modified diet in healthy moderately hypercholesterolemic men and women. Guar also has the ability to lower serum Cholesterol as studied by Tai et al (1999) soluble fibers has effect to lower serum Cholesterol in hypercholesterolaemia.

**CONCLUSION**

Guar can be used as vegetable and it may affect serum Cholesterol, however further studies are recommended.

**REFERENCES**


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