



Scholars Research Library

Annals of Biological Research, 2014, 5 (4):95-96
(<http://scholarsresearchlibrary.com/archive.html>)



Letter to Editor: Ghee consumption and Cardiovascular Diseases

Sahargahi Badrieh^{*1}, PasharYahya², Abdollahzad Hadi³

¹*Kermanshah University of Medical Sciences, Kermanshah, Iran*

²*Kermanshah university of Medical Sciences, Kermanshah, Iran*

³*Tabriz University of Medical Sciences, Tabriz, Iran*

Milk Fat (MF) contains a wide range of bioavailable nutrients such as conjugated linoleic acid (CLA), rumenic acid (RA), Carnitine, vitamin A and vitamin D which make this product as a sole food for neonates and infants during the first stage of growth and development [1,2]. Special producing processes of butter oil ends to almost total removal of water and non-fat solids from oil [3]. Ghee is unique among all edible fats and oils. It is extracted from milk and unlike other oils and fats is held in its native condition whereas vegetable oils strongly need a complex process to be refined to keep suitable materials as a nutrient item. MF does not require none of this processes, indeed, any application of refining techniques for producing MF, may render it far less valuable because these techniques remove natural flavors, colors and naturally occurring antioxidants that are characteristic of butter oil. Thus the cold extracting process of ghee is designed to preserve all of these properties however; hot ghee extracting process may contain certain amount of cholesterol oxidation compounds (COPS) which may cause adverse health effect [2].

According to the nutritional text books it is recommended to limit or eliminate the milk fat because of the saturated fatty acids and trans fatty acids effects on hyperlipidemia and cardiovascular diseases [4,5,6].

The consumption of ghee has been found to have hypocholesterolemic effect and it is even used in Ayurvedic treatments of heart diseases [2]. Although the exact mechanism of hypocholesterolemic effect of ghee has not been recognized, it is believed that ghee mediates the increasing of salts secretion [7].

Nowadays it is been proved that the definition of hyperlipidemia should be based on common laboratory indices such as triglyceride, total cholesterol (TC), HDL-C and LDL-C precise diagnostic criteria, because 50% of heart strokes and 20% of coronary attacks happen among those who haven't experienced hyper-lipidemia based on these biomarkers [8]. This problem has led to widespread attempts to establish the new laboratory parameters like apolipoprotein A1, apolipoprotein B100, none-HDL-C, ratio of apolipoprotein B100 to apolipoprotein A1, ratio of TC to HDL-C, Homocysteine, lipoprotein(a) which are more accurate predictors of cardiovascular disease [4,8,9].

There is a not sufficient document on relationships between butter oil and cardiovascular disease. Due to ethical considerations in human studies, ghee cannot be used in experimental studies in high amounts for a long period of time. Moreover, experimental studies using small amounts of this oil for short period of time do not provide strong results to prove its positive/negative effects [10]. No previous studies have been done on the effects of butter oil consumption using new cardiovascular diseases predictor risk factors. In conclusion, there are not enough scientific proofs for the relationship between ghee consumption and cardiovascular diseases. To examine the exact effects of this product, below studies are highly recommended:

1. *Two groups of human subjects with in an acceptable sample size be selected in which the case group is exposed to high consumption of butter oil during recent years and the control group have had only vegetable oils. Then, all new biomarkers should be measured for cardiovascular diseases and then compared between two groups.*

2. *In another study, two group of animal models with an acceptable sample be selected in which the case group feed with butter oil for long periods and the control group exposed only to vegetable oil. Then, all new biomarkers should be measured for cardiovascular diseases and then compared between those two groups.*

REFERENCES

- [1] YW Park. Bioactive components in milk and dairy products, Wiley-Blackwell, **2009**.
[2] AY Tamime. Dairy fats and related products, Wiley-Blackwell, **2009**.
[3] Codex(FAO/WHO). Standard for Milkfat Products, **2000**, p. 3
[4] LK Mahan, S Escott-Stump. Krause's food & the nutrition care, Elsevier Saunders, **2012**.
[5] Chicago Dietetic Association, South Suburban Dietetic Association, Dietitians of Canada, Manual of clinical dietetics: American Dietetic Association, **2000**.
[6] ME Shils. Shike M. Modern Nutrition In Health And Disease: Lippincott Williams & Wilkins, **2006**.
[7] MV Kumar, K Sambaiah, BR Lokesh. *J Nutr Biochem*, **2000**, 11(2):69-75.
[8] PM Ridker, N Rifai, NR Cook, G Bradwin, JE Buring. *JAMA: The Journal of the American Medical Association*, **2005**, 294(3):326-33.
[9] M Nalini, G Bahrami, Oil, Fats and Heart Health. First ed, Tehran, Hayyan, **2001** [in Persian].
[10] T Najafi, SH Eghtesadi, M Rezaei, K Daneshvar. The effect of Kermanshahi animal oil on serum lipid profile in healthy men, *Behbood*, **2011**, 14(9):290-4[in Persian]