Reviewer’s report

Title: Are dietary patterns related to acne vulgaris in Malaysian young adults?: a case control study

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Reviewer: Bodo Melnik

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Review
Manuscript submitted to BMC Dermatology
Entitled: “Are dietary pattern related to acne vulgaris in Malaysian young adults? A case control study”

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The presented case control study investigates the role of diet in relation to the occurrence of acne. This paper provides sound evidence that 1) a high glycemic load and 2) increased frequencies of milk and ice cream intake are both associated with acne.

Australian and South Korean investigators provided the first evidence for the role of high glycemic load in acne. The authors of this study provide the first clinical evidence for the relationship between milk intake and acne. Their data support epidemiological data of Adebomowo et al. who reported the association between milk/dairy consumption and acne. For this reason, this paper is of utmost importance for clinical dermatology and should be published after considering some major changes, which may further improve the quality of this paper.

General remarks:

The question posed by the authors is well defined and the methods are appropriate and well defined. The results and statistical data are sound. I suggest to modify the title:

“High glycemic load and milk / ice cream consumption are related to acne vulgaris in Malaysian young adults.”

The abstract conveys precisely the message of the obtained results.

Major changes for improvement of this manuscript:

Background:
The authors should clarify, that the association between milk/dairy consumption and acne (references 6-8) was based on retrospective and prospective epidemiological data first reported by Adebamowo et al. in the United States of
America. This is of importance, because the authors are the first group providing
direct clinical evidence by their case control study for this important association.

The authors mention the paper of Fulton et al (4), which described no association
between chocolate and acne vulgaris. The authors should briefly comment on
that paper. This misleading paper compared chocolate and sweet vegetable oil
bars, which had the same glycemic index (GI not yet defined at that time), and
thus compared apples with apples. This paper unfortunately delayed and
confused the relationship between acne and diet for many decades.

The authors should mention that milk is an insulinotropic nutrient and has a high
insulinemic index (Hoyt G, Hickey MS, Cordain L. Dissociation of the glycaemic
and insulinaemic responses to whole and skimmed milk. Br J Nutr 2005;
93:175-177) and increases serum insulin as well as IGF-1 levels (Hoppe C,
Mølgaard C, Vaag A, Barkholt V, Michaelsen KF. High intakes of milk, but not
meat, increase s-insulin and insulin resistance in 8-year-old boys. Eur J Clin Nutr
2005; 59:393-398; Rich-Edwards JW, Ganmaa D, Pollak MN, Nakamoto EK,
Kleinman K, Tserendorolgor, et al. Milk consumption and the prepubertal
somatotropic axis. Nutr J 2007; 6:28; Norat T, Dossus L, Rinaldi S, Overvad K,
Grønbæk H, Tjønneland A, et al. Diet, serum insulin-like growth factor-I and
FL, Key TJ, Allen NE Appleby PN, Roddam A, Overvad K, et al. The association
between diet and serum concentrations of IGF-I, IGFBP-1, IGFBP-2, and
IGFBP-3 in the European Prospective Investigation into Cancer and Nutrition.

They should also mention that another group has already proposed a hypothesis
for the diet-induced impact of insulin/IGF-1 signaling in acne, as both high
glycemic load and dairy proteins increase the serum levels of insulin and IGF-1,
important promoters of sebaceous glands and sebaceous lipogenesis (Melnik
BC. Evidence for acne-promoting effects of milk and other insulinotropic dairy
products. Nestle Nutr Workshop Ser Pediatr Program 2011; 67:131-45; Melnik
BC, John SM, Schmitz G. Over-stimulation of insulin/IGF-1 signaling by Western
diet may promote diseases of civilization: lessons learnt from Laron syndrome.
Nutr Metab (Lond) 2011; 8:41).

Milk produced by persistently pregnant cows contains substantial amounts of
steroids and androgen-precursors, which have been suggested to play another
role in acne pathogenesis (Danby FW. Nutrition and acne. Clin Dermatol 2010;
28:598-604; Danby FW. Acne: Diet and acneigenesis. Indian Dermatol Online J
2011; 2:2-5).

In the discussion the authors should make some statements concerning the
“theory of disturbed intestinal absorption” in acne. In Westernized countries more
than 80% of adolescents are affected by acne. Does the whole population suffer
from abnormalities of intestinal permeability? The most important mechanism of
milk signaling is the postprandial fast upregulation of insulin secretion and the
long-lasting increase in serum IGF-1 levels (see above cited references).
Limitations of the study
The authors should state that they did not measure the amount of consumed dairy protein, which may be a most important determinant for the acne-promoting effects of milk.

Minor mistakes
Page 2, results, line 4:
… to their counterparts in the control group…
Page 3, Background, first line:
… in the United Kingdom
Page 5, third paragraph, second and third line:
… in the control group..
… intake between the case and …
Page 6
Third paragraph, 6th line:
The majority of case (86.4%) drank milk…
Page 7, Discussion, second line:
… considering factors like BMI and gender.
Page 8, second paragraph, line 6:
Our data confirmed epidemiological studies performed in the United States (6-8).
Page 17, reference 14:
Please add the volume of the paper.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.