Acne vulgaris, mental health and omega-3 fatty acids

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FROM ABSTRACT

Acne vulgaris is a common skin condition, one that is associated with significant psychological disability.

The psychological impairments in acne include higher rates of depression, anxiety, anger and suicidal thoughts.

An overlap may exist between nutrients that potentially have both anti-acne and mood regulating properties; examples include omega-3 fatty acids from fish oil, chromium, zinc and selenium.

Here we report on five cases of acne treated with eicosapentaenoic acid and antioxidant nutrients.

Self-administration of these nutrients may have improved inflammatory acne lesions and global aspects of well-being; the observations suggest a need for controlled trials.

THESE AUTHORS ALSO NOTE:

Acne vulgaris has increased in frequency in the last half century, particularly among adult women.

“Since inflammation is one of the earliest events to occur in the acne process, the influence of inflammatory mediators and subsequent free radical generation has become a major focus of experimental and clinical research.”

Communities that maintain a traditional diet high in omega-3 fatty acids have low rates of acne.

A study of over 1000 teenagers found that each of the primary signs of acne – comedones, papules, pustules, acne cysts and oily skin – were significantly lower in those consuming the greatest amounts of fish and seafood.

Patients with acne are more likely to be infrequent consumers of dietary fish and seafood.

Fish oil may be effective in reducing inflammatory acne.
“The inflammatory chemical leukotriene B4 (LTB4) is now known to up-regulate sebum production.”

“Eicosapentaenoic acid (EPA) from fish oil, and gamma-linolenic acid (GLA) from borage oil, have been reported to inhibit the conversion of arachidonic acid into LTB4.”

“Each pilosebaceous unit has the machinery in place to manufacture inflammatory chemicals, including LTB4, with the raw materials supplied from the breakdown products of dietary fats.”

“Fish oil, and EPA in particular, has a wealth of research to support its ability to inhibit LTB4 production.”

“Acne patients may be under increased local and systemic oxidative stress, and the lowered blood levels of various antioxidant and anti-inflammatory nutrients might be a reflection of the increased demand in acne.”

Acne severity is linked to lower levels of vitamins A and E.

Selenium supplementation up to 400mcg is beneficial in acne patients, probably because the endogenous antioxidant enzyme glutathione peroxidase requires selenium for proper function.

“The epigallocatechin-3-gallate (EGCG) polyphenol from green tea has also been suggested to be helpful in acne due to its well documented anti-inflammatory and antioxidant activity.”

The antioxidant and anti-inflammatory herb turmeric has a long history of use in skin disorders such as acne.

“Zinc levels are lower in acne patients than controls, and oral and topical combination zinc may be of therapeutic value.”

Low glycemic load diets are protective against acne.

A study shows that 400mcg/day of chromium improves acne.

“Marine lipids, minerals and phytochemicals might have potential to reduce inflammatory acne lesions, and on the other hand, it is almost difficult not to notice that these are the very same nutrients that have been shown to influence mental outlook, depressive symptoms and anxiety.”

“Omega-3 fatty acids, zinc, selenium, chromium, and even phytochemicals such as those found in green tea, have been shown to improve mood and decrease anxiety in various clinical and experimental studies.”
In this study, acne patients were supplemented with:

- Eicosapentaenoic Acid 1000mg
- EGCG from green tea extract 200mg
- Zinc Gluconate 15mg
- Selenium 200mcg
- Chromium 200mcg

DISCUSSION

“The self-administration of an omega-3 fish oil-based nutrient combination for two months did appear to have some influence on the acne process, and perhaps more importantly, on mental outlook.”

“Specifically, four of the individuals had a reduction in total lesion count, with a range of 11 to 41 less lesions after 2 months. The average total lesion count among the group dropped from 62.8 to 40.4. It was in the area of inflammatory lesions where the intervention seemed to make a more significant difference.”

“Remarkably, not one subject had a worsening of inflammatory acne lesions during the two months, and all had at least some reduction in inflammatory papules.”

“The average inflammatory lesion count at baseline was 20.8 and this decreased to 6.8 after two months.”

“We found an average 24 percent improvement in mental, emotional, and social well-being among users of the omega-3-poly-nutrient supplement.”

“The results are in support of a growing body of research indicating that the omega-3 fatty acid EPA can help regulate mood and depressive symptoms, even in otherwise healthy adults without clinical depression.”

KEY POINTS FROM DAN MURPHY

1) In this study, acne patients were supplemented daily for 2 months with:
- Eicosapentaenoic Acid 1000mg
- EGCG from green tea extract 200mg
- Zinc Gluconate 15mg
- Selenium 200mcg
- Chromium 200mcg

2) Acne vulgaris is a common skin condition, one that is associated with significant psychological disability, including higher rates of depression, anxiety, anger and suicidal thoughts.
3) Acne vulgaris has increased in frequency in the last half century, particularly among adult women.

4) “Since inflammation is one of the earliest events to occur in the acne process, the influence of inflammatory mediators and subsequent free radical generation has become a major focus of experimental and clinical research.”

5) Communities that maintain a traditional diet high in omega-3 fatty acids have low rates of acne.

6) A study of over 1000 teenagers found that each of the primary signs of acne – comedones, papules, pustules, acne cysts and oily skin – were significantly lower in those consuming the greatest amounts of fish and seafood.

7) Patients with acne are more likely to be infrequent consumers of dietary fish and seafood. Fish oil may be effective in reducing inflammatory acne.

8) “The inflammatory chemical leukotriene B4 (LTB4) is now know to up-regulate sebum production.”

9) “Eicosapentaenoic acid (EPA) from fish oil, and gamma-linolenic acid (GLA) from borage oil, have been reported to inhibit the conversion of arachidonic acid into LTB4.”

10) “Each pilosebaceous unit has the machinery in place to manufacture inflammatory chemicals, including LTB4, with the raw materials supplied from the breakdown products of dietary fats.”

11) “Fish oil, and EPA in particular, has a wealth of research to support its ability to inhibit LTB4 production.”

12) “Acne patients may be under increased local and systemic oxidative stress, and the lowered blood levels of various antioxidant and anti-inflammatory nutrients might be a reflection of the increased demand in acne.”

13) Selenium supplementation up to 400mcg is beneficial in acne patients, probably because the endogenous antioxidant enzyme glutathione peroxidase requires selenium for proper function.

14) “The epigallocatechin-3-gallate (EGCG) polyphenol from green tea has also been suggested to be helpful in acne due to its well documented anti-inflammatory and antioxidant activity.”

15) “Zinc levels are lower in acne patients than controls, and oral and topical combination zinc may be of therapeutic value.”

16) Low glycemic load diets are protective against acne.
17) A study shows that 400mcg/day of chromium improves acne.

18) “Marine lipids, minerals and phytochemicals might have potential to reduce inflammatory acne lesions, and on the other hand, it is almost difficult not to notice that these are the very same nutrients that have been shown to influence mental outlook, depressive symptoms and anxiety.”

19) “Omega-3 fatty acids, zinc, selenium, chromium, and even phytochemicals such as those found in green tea, have been shown to improve mood and decrease anxiety in various clinical and experimental studies.”

20) “The self-administration of an omega-3 fish oil-based nutrient combination for two months did appear to have some influence on the acne process, and perhaps more importantly, on mental outlook.”

21) “Remarkably, not one subject had a worsening of inflammatory acne lesions during the two months, and all had at least some reduction in inflammatory papules.”

22) “The average participant reduced the number of inflammatory lesions by 33% after two months.”

23) “We found an average 24 percent improvement in mental, emotional, and social well-being among users of the omega-3-poly-nutrient supplement.”

24) “The results are in support of a growing body of research indicating that the omega-3 fatty acid EPA can help regulate mood and depressive symptoms, even in otherwise healthy adults without clinical depression.”

25) An overlap may exist between nutrients that potentially have both anti-acne and mood regulating properties; examples include omega-3 fatty acids from fish oil, chromium, zinc and selenium. [Key Point]