

Effect of Omega-3 Fatty Acids on Depressive Symptoms in HIV-Positive Individuals: Randomized, Placebo-Controlled Clinical Trial

BACKGROUND:

- Approximately 35 million people worldwide live with HIV.
- The incidence of major depression in HIV-positive patients is between 15% and 40%.
- Prescription antidepressants and herbal remedies proposed for depression treatment are limited by their adverse effects and interactions with antiretroviral therapy.

OBJECTIVE

- To evaluate the effect of omega-3 fish oil supplements on depression symptoms in HIV-positive individuals.

METHODS

- **Design:** Single site, randomized, parallel, double-blinded, placebo-controlled trial; Duration: 8 weeks
- **Inclusion criteria:** confirmed HIV infection; between 18 years old and 65 years old; received antiretroviral therapy for at least one year; CD4 cell count greater than 350 cells/mL; baseline Beck Depression Score of at least 16
- **Exclusion criteria:** history of neuropsychiatric problems and treatment for these disorders and severe medical or surgical conditions in the previous 3 months; history of drug or alcohol abuse; diabetes mellitus; receiving anticoagulants; coagulation disorders, chronic liver diseases, active peptic ulcer disease, or treatment with any omega-3 fatty acids supplements in the previous 3 months; allergy to any fish products or omega-3 fish oil; pregnant women.
- **Primary outcome measure:** Decrease in depressive symptoms from baseline
- 110 patients received either
 - Omega-3 fatty acid soft gel capsule 1g twice daily (54 patients)
 - OR
 - Olive oil soft gel capsule twice daily (56 patients)
- Data handling method was exclusion of subjects

RESULTS

- Ten patients were lost to follow up (4 from omega-3 group and 6 from placebo group)
- **Primary outcome measure:** Using the Beck Depression Score, the mean depressive score in the omega-3 group decreased by 7.82 after one month and 14.12 after two months of treatment. The mean depressive score in the placebo group decreased by 0.58 after one month and by 0.5 after two months of treatment. Using the Hospital Anxiety and Depression Scale, the mean depressive score in the omega-3 group decreased by 2.64 in one month and 5.5 in two months. The mean depressive score in the placebo group only decreased by 0.48 in one month and 0.3 in two months. Using the Patient Health Questionnaire, the mean depressive score in the omega-3 group decreased by 4.5 in one month and by 8.36 in two months. The mean depressive score in the placebo group decreased by 0.54 in one month and 0.28 in two months.

- **Author's conclusion:** Omega-3 fatty acids improved depression symptoms in HIV-positive individuals. Omega-3 fatty acids were relatively well tolerated with only mild GI symptoms reported.

STRENGTHS

- Patients randomized to placebo or omega-3 treatment group
- Gold standard study design used (double-blind, placebo controlled trial)

LIMITATIONS

- Small sample size
- Power calculation not discussed
- Compliance not analyzed
- Short study duration
- Possible unblinding due to taste
- Exclusion criteria did not include patients on antidepressants
- Diet of participants was not monitored for intake of foods high in omega-3 fatty acids

CONCLUSION

- Although the study showed omega-3 fatty acid therapy decreased depressive symptoms in HIV-positive individuals, many limitations were found throughout the study that may have impacted the results. Omega-3 fatty acid therapy may be an option for some HIV-positive patients with depressive symptoms; however, further research should be conducted before omega-3 fatty acids are adopted as a standard treatment for all patients.
- Future research:
 - Future studies should focus on calculating a sample size to obtain a desired power, increasing study duration, and standardizing the omega-3 fatty acid dose.

Reference: Ravi S, Khalili H, Abbasian L, Arbabi M, Ghaeli P. Effect of Omega-3 Fatty Acids on Depressive Symptoms in HIV-Positive Individuals: A Randomized, Placebo-Controlled Clinical Trial. *Ann Pharmacother.* 2016.

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