HEALTH: Fish oil shows promise in preventing psychosis

One hypothesis: People with disease don't process fatty acids correctly

By CARLA K. JOHNSON Associated Press | Posted: February 4, 2010 5:35 pm

Fish oil pills may be able to save some young people with signs of mental illness from descending into schizophrenia, according to a preliminary but first-of-its-kind study. The Austrian study of just 81 patients comes from leaders in the field of youth mental health and adds to evidence suggesting severe mental illness might be prevented with the right intervention. Though it sounds incredibly simple, fish oil fits one hypothesis for what causes schizophrenia, a possible difference in how the body handles fatty acids.

Schizophrenia is a severe mental illness that strikes adolescents and young adults. About 2.4 million Americans have the disorder, which is treated with antipsychotic medication. Since the 1990s, researchers have wondered if the disease could be stopped in its earliest stages, before it fully overpowers a person's grip on reality. Studies have tried antipsychotics in select young people, but troubling side effects pose ethical questions and results have been mixed.

For the new study, researchers identified 81 people, ages 13 to 25, with warning signs of psychosis. The signs include sleeping dramatically more or less than usual, growing suspicious of others, believing someone is putting thoughts in their head or thinking they have magical powers. The young people in the study sought professional help and most were referred by psychiatrists at the Medical University of Vienna, Austria.

Researchers randomly assigned 41 of the patients to take four fish oil pills a day for three months. The daily dose of 1,200 milligrams was about what many people take to get the protective benefits of fish oil for the heart and costs less than 40 cents a day.

The rest of the patients received dummy pills. After one year of monitoring, 2 of 41 patients in the fish oil group, or about 5 percent, had become psychotic, or completely out of touch with reality. In the placebo group, 11 of 40 became psychotic, about 28 percent.

No one knows what causes schizophrenia but one hypothesis says people with the disease don't process fatty acids correctly, leading to damaged brain cells. Omega-3 fatty acids in fish oil could help brain cells to repair and stabilize, the researchers speculate. Some prior studies on omega-3 supplements in people with full-blown schizophrenia have shown benefits.

Side effects of antipsychotics, including sexual dysfunction and weight gain, are troubling to young people, Amminger said. Fish oil, recommended for heart health, is more acceptable to patients with warning symptoms.

The research was funded by the Stanley Medical Research Institute, a nonprofit in Chevy Chase, Md., that supports research on schizophrenia and bipolar disorder.

Posted in Health-med-fit on Thursday, February 4, 2010 5:35 pm | Tags: H.fishoilmentallillness

http://www.nctimes.com/lifestyles/health-med-fit/article_095b57b4-11f7-11df-ba26-001cc4c002e0.html
Read the accompanying article about schizophrenia then answer the following questions. Please type all responses other than calculations.

1. What is the population for this study? (1 point)

2. What is the sample? How large is the sample? (Don’t include the control group.) (2 points)

Let \( p \) represent the population proportion of young adults with symptoms of schizophrenia that actually develop the disease.

3. If 28% of young adults with symptoms actually develop schizophrenia, what is \( p \)? _______ (1 point)

4. What is the proportion \( \hat{p} \) in the treatment group that developed schizophrenia? _______ (1 point)

5. Do you think that taking fish oil may help young adults with schizophrenia? Test the hypothesis that the proportion of young adults who develop schizophrenia is lower for those taking fish oil. Use 1% for the level of significance.

a) Is it ok to use the normal distribution to approximate the binomial distribution? Explain. (1 point)

b) State your hypotheses. (2 points)

\( H_0: \)

\( H_1: \)
c) Calculate your sample test statistic. Show your formula and steps used in the calculation. (4 points)

d) What is the p-value? (2 points) _______

e) Determine whether you should reject your null hypothesis and explain why. (2 points)
f) State your conclusion about fish oil in non-technical terms. (2 points)

6. Find a 95% confidence interval for the proportion of adolescents with early signs of schizophrenia who are taking fish oil that will develop schizophrenia.

a) Find \( z_c \). ________ Write the formula for calculating a confidence interval and show your work. Be sure to include the parameter that you are estimating. (3 points)

b) What does your confidence interval mean in terms of the situation? (2 points)

Presentation (neatness, grammar and organization) (2 points) ________