Original Article

Comparison of the effect of fish oil and ibuprofen on treatment of severe pain in primary dysmenorrhea

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Abstract

***Background*:** Primary dysmenorrhea is common among young girls and child-bearing women. The purpose of this study was to compare the efficacy of fish oil and Ibuprofen on the treatment of primary dysmenorrhea.

Methods: This clinical trial study was done on students of Babol University of Medical Sciences in 2010. One hundred- twenty students who had moderate and severe dysmenorrhea were randomly divided in two groups. The first group (60 girls) received 1000 mg/day fish oil capsule in all her cycle days and the second group received 400 mg ibuprofen when their pain started (duration of this study was 2 months). Student t-test, Mann Whitney and Freidman tests were used when appropriate. This clinical trial was registered in the Iranian Registry of clinical Trials (www.IRCT.Ir) (IR21101133004N4).

Results: There was a significant difference between the intensity of pain before and after treatment by ibuprofen (p=0.0001) and fish oil (p=0.0001). Furthermore, the reduction of pain in fish oil recipient was higher than the IBV prefer group (p=0.0001).

Conclusion: The results show that the efficacy of fish oil is better than ibuprofen on treatment of severe pain in primary dysmenorrhea.

Key words: Primary, Dysmenorrhea, Ibuprofen, Fish oil, Treatment.

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Dysmenorrhea refers to painful contractions of mense which happens in the beginning of bleeding or a little before the start of mense. Eighty percent of women experienced it in turns during pregnancy. Most of the contractions are not severe, but in 10% of the cases, it can cause the person to stop doing her daily activities and this may bring financial and social disadvantages (1, 2). General incidence of primary dysmenorrhea has been reported to be between 40 % and 95% (3). For the treatment of primary dysmenorrhea, various methods have been suggested: aspirin, acetaminophen, ibuprofen, naproxen and mefenamic acid, oral contraceptive pill and cervix dilation in severe levels, use of IUDs, doing exercises, keeping the abdomen and back warm and using hot heating pad, electrical stimulus of nerves in the waist, abdomen and backside, using nutritional complements like calcium, magnesium, vit E, vit B1 and vit C and avoiding salt and cigarette (4-10). One of the non-steroidal anti-inflammatory drug is ibuprofen which when compared to other drugs has more efficacy and lesser side effects (3). This drug by preventing fabrication of prostaglandin and stopping cyclo oxigenaze enzyme reduces the production of prostaglandin prefabrications and tromboxan from arashidonic acid (11). Recent studies have shown the fish oil impacts on primary dysmenorrhea. The main mechanism of fish oil is the suppression of prostaglandin synthesis (12). The purpose of this study was to compare the effect of fish oil versus ibuprofen on painful cramps of mense.

Methods

This clinical study was conducted on students of Babol University of Medical Sciences during the year 2010. Among the 500 students of Nursing and Midwifery Department, 120 girls who suffered from moderate and severe form of primary dysmenorrhea were randomly selected and divided in two groups (60 girls in each group). Inclusion criteria in this study include: ages between 18–22 years, being single (not married), regular mense (between 26–30 days), having primary menstrual pain in most cycles during the six recent months and moderate and severe pain according to speech multi – dimensional standard criterion.

Each girl was evaluated during her 4 cycles. In the first cycle, (control cycle) no method was offered. We only requested them to complete the questionnaire and the information about mense (intensity and duration of pain) during their menses period. They needed to determine their pain intensity by speech multi – dimensional grading system. (Andresh Milsom Scale) (13).

During the second and third cycle and two months after menstrual period, the severity of the patient's pain was determined. Sixty girls received 1000 mg/day fish oil during all days of the cycle and 60 girls received 400 mg Ibuprofen when their pain started and if their pain continued they would take the same dose after 8 hours (duration of taking the drug was 2 months).

The adverse effects of the drugs in these two groups were checked through weekly visit. The patients received drug pockets each month, and we described to both groups the possible drug complications and asked them to refer to us if any complications occurred. After two months of treatment, the intensity of pain was determined.

After the data collection, we coded them by SPSS statistical software and we used t–test for matching two groups for some variables and Mann – Whitney for comparing the severity and duration of pain before intervention, intensity of pain after intervention, evaluation of confirmation and a need of more sedative; and Freidman test was used to compare the severity and duration of pain before and after treatment.

Results

The mean age of the patients in the fish oil group was 20.14±1.2 and in ibuprofen group was 20.13±1.5 years (p=0.1). The menarche age in fish oil was 12±1.03 and in the ibuprofen group was 12.7±101 years (p=0.6). The start of dysmenorrhea in fish oil group was 14.2±1.1 and in ibuprofen group was 14.7±1.2 years (p=0.7). The mean duration of bleeding before intervention in fish oil group was 6.6±1.1 and in ibuprofen group was 6.5±1.7 days (p=0.5). The mean pain intensity before intervention in fish oil was 3.74±0.5 and in ibuprofen group was 2.3±0.5 (p=0.9). The mean mense pain duration before intervention in fish oil group was 36.5±0.6 and in ibuprofen group was 36.3±0.9 days (p=0.1). There were differences between fish receiving group and ibuprofen recipient group in pain intensity before and after intervention (table 1, 2).

On the other hand, in the performed study, there was a difference between the two groups after intervention in view of pain intensity (p=0.0001). The average of mense pain intensity after the end of the first and the second month of treatment and two months after the end of treatment is shown in tables 1, 2.

Table 1. Comparison of frequency, relative frequency and average of menses pain intensity before and after receiving fish oil separately in first, second and two months after finishing treatment.

Group	Before use		After use (1stm)		After use (2stm)		Two month after finishing use	
Pain intensity	frequency	Percent	frequency	percent	frequency	percent	frequency	Percent
Very low	0	0.0	0	0.0	16	26.7	30	50
low	0	0.0	25	41.7	29	48.3	28	46.7
moderate	40	66.7	25	41.7	15	25	2	3
sever	20	33.3	10	16.7	0	0.0	0	0.0
total	60	100	60	100	60	100	60	100
mean	3.74		01.3		1.89		1.36	
P value	0.0001		0.0001		0.0001		0.0001	

Table 2. Comparison of frequency, relative frequency and average of mense pain intensity before and after receiving ibuprofen separately in 1st, 2nd and two month after finishing treatment.

Group	Before use		After use (1stm)		After use (2stm)		Two month after finishing	
Pain intensity	frequency	percent	frequency	percent	frequency	percent	frequency	percent
Very low	0	0.0	9	25	10	16.6	16	26.6
low	0	0.0	26	43.4	27	45	30	50
moderate	40	66.6	23	38.3	23	38.3	14	23.3
sever	20	33.3	2	3.3	0	0.0	0	0.0
total	60	100	60	100	60	100	60	100
Mean	2.39		1.24		1.14		1.09	
P value	0.0001		0.0001		0.0001		0.0001	

Discussion

With regard to fish oil effect on menstrual pain intensity, the result of this study demonstrated a difference in pain intensity before and after receiving fish oil (p=0.000). In a peformed study by Polatian in 2005, the recovery percentage after treatment decreased in half, but in this study she did not perform any comparison with Ibuprofen (12). Also, Yaghmai et al. showed significant difference between the two groups (mefenamic acid and fish oil – mefenamic acid and placebo), which is similar to the findings of our study (14). In1999, 106 women suffering from primary dysmenorrhea received 100 mg/day vit B1 during 6 months constantly and 80% had recovery (15).

In comparing pain intensity before and after receiving ibuprofen, 15.8%, in the second month was 18.4% and in the third month was 22.4%. In performed a study by Sekhavat et al., the recovery percentage after receiving ibuprofen was 88.4%, which is more than the recovery percentage of the present study. The reason of this difference was the way the drugs were used in Sekhavat study.

In his study, ibuprofen was prescribed 3 times a day and 5 days a month (three days before and two days after mense start) (16). But in other studies, in either way the drug use was similar to the present study, similar results were reported. In a performed study by Zamani, fish oil is as effective in the treatment of primary dysmenorrhea. In 2001, Wilson et al. compared the effect of using 4 gr/day fish oil and it was compared with placebo. This study shows that fish oil is more effective than placebo on primary dysmenorrhea (17). By comparing the present study results with other studies, we can say that the treatment effect of fish oil and ibuprofen is not similar while the effect of fish oil is better than ibuprofen. About the comparison of pain intensity in two groups after intervention, there was difference in the first month (p=0.0001) and in the second month after treatment (p=0.0001) and two months after finishing the treatment, there was a significant difference (p=0.0001).

We can conclude that pain intensity and recovery percentage after treatment in fish oil group were much more compared to Ibuprofen group. In a performed study by Rakhshai in 2005 entitled:" The comparison of pain intensity after intervention in relaxation group and Ibuprofen group", p = 0/124 was reported that in the first month and p = 0/703 in the second month and that there was no significant difference and the reason of difference between the result of Rakhshai's study and the result of the present study in comparison of ibuprofen with relaxation group during 2 months in Rakhshai's study (13).

In conclusion: fish oil is a drug with high acceptance and endurance and is effective in the treatment of patients who suffer from primary dysmenorrhea and it can be substituted with non-steroid antianfola matuar which has high complication. Also, we recommend that some other researches be performed by prescribing various doses of fish oil in loteal phase.

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