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RESEARCH ARTICLE

MICROSCOPIC RESPONSE OF INFERTILE PATIENT WITH SUPPLEMENT FROM *ANADARA GRANOSA* L.

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ABSTRACT

This research aims to identify andanalysis of microscopic spermatozoa quality from infertile patient beforeand aftertake a supplements from *Anadara granosa* L. Semen sample were taken from infertile patients at the Prodia Laboratory, Makassar, Indonesia. The clamp sample were collected from Pannikiang Island, District of Barru, South Sulawesi, Indonesia. Data analysis applied T-test in order to know the concentration, motility and viability of sperm quality from infertility patients. The results show that place boad ministration of 2 capsule per day significantly improved the microscopic characteristic of the concentration, motility and viability of the sperm.

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INTRODUCTION

Infertility is one of the disturbances in reproduction health. Infertility is defined as disability to yield conception after regular intercourse without using any contraceptive within a year (Rowe *et al*., 2000). Approximately 30% of infertility causes is man factor that is the abnormal quality of spermatozoa (Jonson, 2003). Spermatozoa quality is determined by the amount, motility, and morphology of spermatozoa (World Health Organization, 1999). Infertility is defined as the in ability to generate conception after regular inter course without using contraception after one year (Rowe, *et al*., 2000). As many as 30% of the causes of male infertility is a factor that is abnormal Spermatozoon quality (Johnson, 2003). Spermatozoon in semen quality (cement) is determined by the number, motility and morphology (normal or abnormal) (World Health Organization, 1999). Tendean (2009), stated that there are several causes responsible for infertility, namely decrease of sperm motility as a result of mitochondria dysfunction causing less supply of energy, or dys function of non-genomic progesterone receptor. Research on shellfish of various aspects have been done by specialist both outside Indonesia and in Indonesia itself, namely spawning effort of snail bamboo eye *Turbo argyrostoma* L., and heavy metal content in Jakarta bay (Lestari and Edward, 2004) and mineral waters, and sedimentation of shell *Anadara granosa* L. In Demak district, Central Java (Suprapti, 2008). Reserach on spermatologi in infertility problems couples and in the field of andrology also has heve been done. But reserach on interaction between quality of human sperm with administration of shell supplements in a capsule has not been reported, so it is necessary to study the Microscopik response (concentration, motility, and viability) of human sperm which are given *Anadara granosa* L. supplements with multiple doses.

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MATERIALS AND METHODS

Experimental Design

Clamps *Anadara granosa* L. Was taken from Pannikiang Island, Sub-District of Tanete Rilau, District of Barru, South Sulawesi, Indonesia. Manufacture of capsule performed in the Laboratory of Product Development, The Center for Food, Nutrition, and Health Research, Hasanuddin University. Samples of semen were obtained from infertile patients in Wahiddin Sudirohuso do hospital and analyzed in Prodia Laboratory, Makassar, Indonesia. The pictures of samples were taken in the National Reference Center. This research was a pre-experimental study by one grouppre-test and post-test on macroscopic quality of semen, by which a measure was taken before a treatment (pre-test) followed by another measure after treatment (post-test).

Table 1. Pre-test and post-test on the quality of sperm of the control group, 1 treatment group, and 2 treatment group

	Plasebo 1x1 capsule/day			Nutrition blood clams dose of 1 x 1 capsule / day			Nutrition blood clams dose of 2 x 1 capsule / day		
	Consentration (Million /mL)	Motility (%)	Viability (%)	Consentration (million /ml)	Motility (%)	Viability (%)	Consentration (million/ml)	Motility (%)	Viability (%)
Pre-test	57,87	2,50	38,33	57,26	3,08	31,67	56,97	5,41	40,83
Post-test	65,1	3,330	41,25	59,8	22	68,75	60,49	22,25	79,58
	7,23	0,83	2,9167	2,54	18,92	37,08	3,52	16,84	38,75
P	0,37	0,34	0,42	0,022	0,000	0,0000	0,015	0,000	0,000
Refference	≥ 20	≥ 25	≥75	≥ 20	≥ 25	≥75	≥ 20	≥ 25	≥75

Respondents

This experiment involved 36 respondents who were chosen from the 150 patients participated in the previous research showing an indication of infertility symptoms. There spondents were 16–40 years old. The respondents were divided into 3 groups consisting of 12 patients. Semen analysis on each individual in the three groupsdone before and after administration of *Anadara granosa* L. supplements.

Sample Collection

Sperms were collected in the laboratory from infertile men who were fasting sexual intercourse for 3-4 days.

Data Analysis

Semen analysis clinically based on WHO standards (1999) consists of microscopic examination (concentration, motility and viability of human sperm).

RESULTS

The results mean of comparative clinical trials of human sperm base on microscopic examination to concentration, motility and viability of spermatozoid is shown in the Table 1. From Table 1 above shows that after microscopic examination of quality concentration and motility of spermatozoa through pre test and post test show that administration of placebo doses 1 capsule per day did not improvement to sperm quality. It is shown that all the p-value for quality and motility of spermatozoa above 0,05. Spermatozoon and conducted pre-test and post-test showed that the administration of a placebo dose of 1 x 1 capsule / day had no effect on the quality improvement Spermatozoon. It is characterized by all the p-value for the concentration and motility Spermatozoon above 0.05. In statistical t-test result shows significant progress for spermatozoa concentration from treatment group with administration *Anadara granosa* L. with dose 1 capsule per day. That shown by all the p-value for the concentration and motility of Spermatozoaindicate value below 0,05.

DISCUSSION

At microscopic examination, the measurement of concentration can be roughly calculated by mean number of spermatozoa in some field of view (400x) when observations. Based on the examination of concentration, sperm in the treatment group improved quality of spermatozoa. Motility examination is done by looking the movement of the spermatozoa. Spermatozoa motility can be classified into 4 groups: (Wibisono, 2010): a) Spermatozoa forward, fast, and straight; b) Spermatozoa forward, slow, and winding; c) there is no movement forward, vibrating in place, circular motion; d) does not move at all. In this study, the results of sperm motility in the treatment group (Table 1) improved the quality. The results of the examination viability/vitality of spermatozoa in the control group (Table 1) also did not significant improvement while in the treatment group (Table 1) show significant improvement of Spermatozoaviability. Wibisono, (2010) state that the examination of spermatozoa viability related the examination of motility. Percentage spermatozoa dead should not be more than the immotil spermatozoa. If there are many immotil spermatozoa alive indicated that abnormalities of structure of sperm tails, especially flagellum structure. Weight has an influence on spermatozoa quality. Because fatty tissue can wrap the male testis, so that raising temperature causes bad influence the sperm (Datuk, 2008). From microscopic examination, it can be shown that the spermatozoa in control group did not experience a significant improvement while treatment group with administration dose 1 capsule per day and 2 capsule per day indicated significant improvements.

Conclusion

Administration of supplements *Anadara granosa* L. dose 1 capsule per day and 2 capsule per day given effect improvement to volume, pH, viability/vitality of spermatozoa in treatment group. Administration supplements dose 2 capsule per day has a better effectiveness than dose 1 capsule per day.

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