

INFERTILE STATEMENT IN PHU CAT DISTRICT (IN BINH DINH PROVINCE) AND THANH KHE DISTRICTS (IN DA NANG PROVINCE)

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Abstract

Infertility is defined as lack of conception after as list 12 months of unprotected intercourse. To describe the statement of infertility, 22099 couples were observed. In order to investigate harmfulness effects of some environmental factors, especially, effects of Agent Orange, we have carried out this study. 72 semen samples from male partners in infertile couples were analyzed, we found that: 1. The rate of infertility in 8 communes (in Phu Cat - Binh Dinh) and 3 communes (in Thanh Khe - Da Nang) is: 1,31%. 2. In infertile couples 66,67% male partners had semen abnormality (the rate of male were not demonstrable abnormality: 33,33%). 3. High ratio of azoospermia and high ratio of oligospermia had been found in infertile male partners who lived in Phu Cat and Thanh Khe Districts: azoospermia: 29,24%, oligospermia: 27,78%. Others semen aberration were found: low motility: 29,41%, low ratio of living spermatozoid: 11,76% and teratozoospermia: 7,84%.

Introduction

For improving living conditions, reproductive health care (including reducing the rate of infertility) is one important thing we have to focus in. Infertility is defined as lack of conception after as list 12 months of unprotected intercourse [7, 10, 11]. For investigating and diagnosing infertile couples, semen analysis is necessary. Base on Baker's research (1993) [mention in 7], the reason of infertility: 1/3 from husband, 1/3 from wife and 1/3 from both.

Semen analysis is the useful test for infertile diagnosis; check the quality of infertile treatment. There are some factors could cause abnormalities in semen [1, 2, 3, 4, 6, 7], some main factors as follow:

High temperature, noisy, microwaves, iron as: Lead, boron, cadmium and some chemicals: dibromochloropropan, pesticides, vinyl chloride, carbon disulphide.

During the war, Da Nang airbase (located in Thanh Khe district, Da Nang province) and Phu Cat airbase (located in Phu Cat District, Binh Dinh province) were the areas contain war chemicals. After the war, these toxic chemicals continue to effect to the people who live in these areas.

For investigating statement of infertility and the quality of semen of males in infertile couples who live in hotspot, we carried out this study.

The objectives:

- To describe statement of infertility in Phu Cat - Binh Dinh and Thanh Khe - Da Nang.
- To describe characteristics of semen of infertile males who effected with war chemicals.

Methods

1. Investment about infertile statement: all of couples with age from 18 to 40 who live in 8 communes nearby Phu Cat airbase and 3 communes nearby Da Nang airbase. Method: interview and observation.

2. Semen analysis for the males in infertile couples: 72 semen samples from infertile males (age 25 to 48) were analyzed. The samples were collected after a minimum of 48 hours but not longer than seven days of sexual abstinence. Semen analyzing are performed base on WHO standards 1992, 1995, 1999 [12, 9, 13].

Results and discussion

1. Infertility statement in Phu Cat - Binh Dinh and Thanh Khe - Da Nang.

In Phu Cat - Binh Dinh: 13,563 couples in Phu Cat district were investigated. 8,536 couples in Thanh Khe district were investigated. Statement of primary infertility in Phu Cat - Binh Dinh and in Thanh Khe - Da Nang were showed in table 1.

Table 1. Statement of primary infertility classified by number of year are infertility

District	No. of couples were investigated	No. of infertile couples			Total infertile couples	
		> 1 year	≥ 2 years	≥ 3 years	n	%
Phu Cat	13563	45 (0.33%)	28 (0.21%)	96 (0.71%)	169	1.25
Thanh Khe	8536	68 (0.80%)	15 (0.18%)	38 (0.45%)	121	1.42
Total	22099	103	43	104	290	1.31
p		<0.001	>0.05	<0.001	>0.05	

The number of primary infertile couples in Thanh Khe and Phu Cat is 290 (1.31% reproductive couple population).

The statement of secondary infertile couples in Thanh Khe and Phu Cat were showed in table 2.

Table 2. Statement of infertility in Thanh Khe - Da Nang and Phu Cat - Binh Dinh

District	No. of survey population	The kind of infertility			
		Primary	Secondary	Total	%
Phu Cat	13563	169	486	655	4.83
Thanh Khe	8536	121	343	464	5.44
Total	22099	290	829	1119	5.06
P(PC- TK)		>0.05	>0.05		<0.05

The results in the table 2 showed that: The rate of secondary infertility higher than the rate of primary infertility. The total infertility rate is 5.06%. The rate of infertility in Thanh Khe is higher than in Phu Cat.

2. The results of semen analyzing in males in infertile couples.

72 semen samples of male in infertile couples in Phu Cat and Thanh Khe were analyzed (showed in table 3), we found that: The rate of male have normal semen is 33.33%. The rate of male have abnormal semen is 66.67%. Its mean, the reason cause infertility in male is 66.67%. The same results were found by some researchers [1, 7, 11]. Base on their researches, in the infertile couples 1/3 reason found in male, 1/3 reason found from female, 1/3 reason from both (male and female).

Table 3. Characteristics of semen from people in infertile couples.

	Normal	The kind of abnormal semen				
		Number	Motility	Vitality	Morphology	Azo-spermia

N	24	20	15	6	4	21	5
%	33.33	27.78	29.41	11.76	7.84	29.17	6.94

Compare to the results of this study to the results of survey carried out by Anek Aribarg on 250 infertile couples in Thailand (table 4), we found that: The rate of normal semen in our research nearly the same in Anek Aribarg survey. The rate of oligospermia in our research nearly the same in Anek Aribarg survey. The rate of azospermia in our research higher than in Anek Aribarg survey ($p < 0.01$).

Table 4: Some characteristic of semen in infertile couples

		Normal	Oligozoospermia	Azoospermia
Phu Cat, Thanh Khe	n	24	20	21
	%	33.33	27.78	29.17
Thailand	n	88	73	35
	%	35.2	29.2	14.0
P		>0.05	>0.05	<0.01

Compare to the results of this study to the results of survey carried out in the north on 420 infertile couples (table 5), we found that:

- In Phu Cat and Thanh Khe, the rate of sperm numeral abnormality such as oligospermia and azoospermia very high.
- The rate of living spermatozoid in Phu Cat and Thanh Khe higher than in the north.

Follow some researchers [1, 4, 6], some physical factor like high temperature short waves could reduce motility and vitality of sperm. Most of people in Phu Cat are farmers, people in Thanh Khe are workers, sellers... they didn't contact to some harmful physical factors so that the rate of living sperm higher than people in the north.

Table 5. To compare the characteristics of semen in infertile couples in Phu Cat, Thanh Khe and in people live in the north.

Group	n		Normal	Numeral abnormal	Azo-spermia	Motility	Vitality	Morpho-logy
Phu cat, Thanh Khe	72	N	24	20	21	15	6	4
		%	33.33	27.78	29.17	29.41	11.76	7.84
North of VN	420	N	185	69	43	134	109	59
		%	44.05	16.43	10.24	35.54	28.91	15.65
P			>0.05	<0.05	<0.001	>0.05	<0.05	>0.05

To compare the characteristics of semen from males in infertile couples in Phu Cat and in Thanh Khe (the results showed in table 6), we found that:

- There are no significant differences about characteristics of semen from males in infertile couples in Phu Cat and in Thanh Khe.

- Phu Cat is countryside, most of people are farmers. Thanh Khe is urban area, most of people are workers. There are some differences from their living conditions, living habits (in Phu Cat and in Thanh Khe). Some difference factors in two places may cause difference thing for the semen. For detail analysis, we need a bigger size of study.

Table 6. To compare the characteristics of semen from males in infertile couples.

Group	n		Normal	Oligo-spermia	Azo-spermia	Motility	High rate of death sperm	Morphology
Phu Cat	48	N	16	13	15	10	5	3
		%	33.33	27.08	31.25	30.30	15.15	9.09
Thanh Khe	24	N	8	7	5	5	1	1
		%	33.33	29.17	20.83	26.32	5.26	5.26
P			>0.05	>0.05	>0.05	>0.05	>0.05	>0.05

Follow the results of the study and compare to others results in other place, we found that:

- In Phu Cat and Thanh Khe: 66,67% male partners in infertile couples had semen abnormality (the rate of male were not demonstrable abnormality: 33,33%).

- High ratio of azoospermia and high ratio of oligospermia had been found in infertile male partners who lived in Phu Cat and Thanh Khe Districts: azoospermia: 29,24%, oligospermia: 27,78%. Others place, these abnormal are smaller. Acknowledgement: We express our thanks to colleagues in Phu Cat health center and Thanh Khe health center for their good cooperation.

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