Leukocytospermia compared to those with spinal cord injuries and without spinal cord injuries

Kowsar Infertility Center (1377 and 1376)

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Abstract: According to data suggesting that in males with leukocytospermia, infertility is more prevalent, a study according to exiting data, extracted from registers of infertile patients referred to "Kowsar center for infertility" was done, for determining of leukocytospermia prevalence and comparing it in patients with spinal cord injury (SCI) and those without SCI. In 410 cases of infertile males, 171 and 239 sperm grams from patients with SCI and those without SCI were studied, respectively. Existence of SCI and number of WBC \ HPF in semen registered in a data chart. In patients with SCI is almost all of patients there was a higher number of WBC \ HPF than normal (> 0-1) - (eg. Leukocytospermia) 87.1% which the highest was> 50 WBC \ HPF (32.7%) and then 1 -5 WBC \ HPF (15.2%). In patients without SCI, 57.8% were in normal range of WBC in semen (0-1 WBC \ HPF) (eg no leukocytospermia) and 26.8% had 1-5 WBC \ HPF. There was a significant difference between prevalence of leukocytospermia in these two groups.

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Introduction and problem statement

One of the major problems that the people who suffered spinal lesions is suffering from fertility problems with an overview of records referred to infertility center Kowsar, we found that the instances variable of leukocytes can be seen in their spermogram therefore, decided to examine the issue. Infertility in these men is caused by several factors. In persons with spinal cord injury (SCI) on sperm storage, organ builder as sperm and sperm output pathways of specific anatomy has not changed, but the sensor and motor and autonomic dysfunction on target organs, for fertility and disconnection and Central nervous system will not have effects on upper spinal cord. These effects cause seminal fluid stasis and lack of proper drainage system due to ejaculatory disfunction. We divided into two separate groups.

The purpose of this research is there any difference between the WBC count in sperm quality in men with SCI with WBC count in normal sperm quality in patient who visit in Kowsar infertility center.

We studied 410 cases which of 171 cases were SCI and 239 cases were individual person who reffered to Kowsar infertility center. In this study we considered:

1.The number of WBC in first spermogram (1376-1377)

2.Is there spinal cord injury or not.

Research Background

In clinical studies, Leukocytospermia usually associated with reduction in other parameters in seminal liquid and reduced human Oocytes fertility invirto in these people have reported . But treatment with antibiotics in these patients does not completely solve Leukocytospermia.

These situation was in individual patients with infertile Leukocytospermia but not those with spinal cord injury .

According to the article, perhaps due to Leukocytospermia genital tract infections, either bacterial or viral, all of them have the ability to caused infertility Leukocytospermia.

Another reason for the Leukocytospermia have an alternative mode of inflammation with noninfectious causes of abnormal spermatozoa or perhaps in response to chemical stimuli. Chemical stimulus can be cigarettes, alcohol, marijuana, that increased count of WBC in seminal liquid in infertile men.

In another study showed that infertile men with chronic Leukocytospermia, treatment with antibiotics has improved slightly some of the findings and parameters of sperm quality, but not completely improved Leukocytospermia or the parameters of the seminal fluid normally allow (R=18).

Other researches in an article about the 1994 stated that most men with Leukocytospermia have an acute or chronic infections, especially Subclinical in the genital tract may be based on history and physical appropriate tests and urine analysis correctly diagnosed. (R=17).

In 1996, a review of the WBC in Seminal fluid state as the definition of the Leukocytospermia from WHO (10^6< WBC Per ML of Seminal fluid) may cause uncertainty in the assessment of clinical

findings in Leukocytospermia without asymptomatic (R=16).

A report accompanying the Leukocytospermia and reduction of motility and fertilizing ability is presented and the negative effects of high WBC on seminal fluid parameters and male fertility has been examined and has been confirmed by clinical findings and statistical (R=13).

This paper has shown that only 27% of men have WBC above 10^5/ ml in seminal fluid with abnormal paramete are obvious, but in other cases this difference is not clearly measurable.

The subject of other papers under review Leukocytospermia in people with spinal cord injuries or comparison with normal subjects and specifically did not find and tried to be used from other articles related dispersly.

The investigation of the records of case without SCI (infertile individuals) generally according to WHO definition (1-0 = WBC) is normal range and more than (5-2) named Leukocytospermia respectively (each HPF). Perhaps most often associated with urinary tract infections and fewer cases with Epididymoorkit .

High WBC (10^6 <WBC) in these patients is seen very few (7.5% of patients without spinal cord injury are included) and we could not find other terms of the history and clinical findings in patients without spinal cord injury cases with no mention of Leukocytospermia.

Methods

Referring to Kowsar infertility center and base on data, has extracted from records that are related to the years 1376-77, the research was done. On the other hand research based on data available as existing data.

General information on the vertical columns of the table with the indices of sperm quality printing since variable were classified in two categories Leukocytospermia and without Leukocytospermia whether patients with SCI and non-SCI subjects were compared.

And the other two tables based on the number, percentage, cumulative frequency of the two series classified.

In reviewing the information in the records referred to infertility Kowsar center there are generally two groups: a group of infertile individuals and the group of veterans and people with spinal cord injuries . second group can divided to two group with spinal cord injuries (SCI) and without spinal cord injury.

In this study, patients without spinal cord injury were placed in infertile individuals group and we have two group:

A: with spinal cord injuries

B: without SCI

Based on semen sample people with spinal cord injuries themselves were divided in to two groups. Those who are willing and able to make seminal fluid sample group and second group who needs to prepare samples by electro ejaculation (EE) (depending on the level of injury), but in this study, regardless of the method of sperm sampling classification of SCI and without SCI were considered.

In this study, the causes of success or failure and how to care for those who reffered were not assessed. And there are not plans to extend the investigation to the effects of Leukocytospermia on treatment in these patient and only compared prevalence Leukocytospermia in people with spinal cord injuri and without spinal cord injuries were studied.

Research findings

The initial review of 410 cases were analyzed of which about 171 cases were of people with spinal cord injuries and 239 cases were without spinal cord injury who reffered to Kowsar infertility center.

Factors that considered in the review were the number of Leukocytes (WBC) on spermogram and absence or precense of spinal cord injuries. Just one spermogram in patient records related to first visit have been selected as the criterion between 1376-1377.

To better evaluate, one table contain two part was prepared the right side was about people with SCI and the left was about patient without SCI (see table 1)

Rate of WBC listed in the table in the vertivcal columns in the contract specified range (1-0 and 5-2 and 10-6 per HPF) and in horizontal columns has two separate sections for people with spinal cord injury and without spinal cord injury in the number of Leukocytes and the percentage and cumulative frequency were recorded.

In the following for these numbers the charts were ploted could get a glimpse that the maximum number of WBC in people with spinal cord injury was over 50 (in the HPF). (figure 1)

The cumulative frequency graph depicting individuals were almost regularly with a gentle slope upwar at the end of he course in a range of 50 < WBC stronger upward slope. Diagram no.2.

Evaluation of patient without SCI shown that maximum percentage rat of them was in normal range of WBC (0-1)and except that one milder increase of Prevalence of WBC is seen in range of 2-5.

About cumulative frequency of Leukocytospermia in patients without spinal cord injury was obtained an ascending slop up at the beginning and the next in the area has continued with a gentle slope upward(figure 4).

Finally, an overall comparison between two groups of people with spinal cord injuries and without spinal cord injuries was done in a chart . but the comparison was

done in two range of WBC 1. Normal (1-0) 2.WBC above the normal range (1<WBC respectively).

In other words, the prevalence of Leucytospermia these two groups together is shown in a bar chart (figure 5).

The information in this document and classify individuals according to data obtained in this study it will found that the expressed by the following our initial hypothesis there are difference between seminal fluid WBC of individuals with spinal cord injuries and without spinal cord injuries reffered to Kowsar infertility center is confirmed and much difference Leukocytospermia between the two groups was seen .

Conclusion

This study compared the Leukocytospermia prevalence in two group 1- with SCI and without SCI was performed.

And with considering studies has done, a high prevalence of Leukocytospermia in people with spinal cord injuries to individuals who referred to infertility center was obtained . A study that published by world health organization (Who) (1995) Leukocytospermia defines for more than WBC 10 per ML in the seminal fluid.(R=18)

Further notes that the main causes Leukocytospermia not fully known, but various infections subclinical repeated in the male sex is probably one of the main causes.

According to various reasons mentioned in the previous pages and various causes of Leukocytospermia prevalence in people with spinal cord injury, we reach to this conclusion that the Leukocytospermia in SCI is much more common and it is a multi factorial problem. And only one particular factor can not be considered as a cause of it.

Note that, in comparison of Leukocytospermia with individuals and spinal cord injuries and comparison Leukocytospermia causes have not been reported in both groups, the majority of studies have documented WBC in seminal fluide of infertile patients was normal, perhaps in the future we will able to reduce the risk factors listed in the lives of people with spinal cord injuries and at least create appropriate conditions to them to be tried fertility.

It is recommended that research be more practical if all of the individual SCI who refers to infertility center should have accurate and regular records of their culture spermogram and urine analysis to determine and the rate of conflict in infectious genitourinary system and the special charts and various treatments and various infertility prosegers is done correctly and classic report them in order to get them to a more comprehensive study could be done and finally a few suggestion would be able to reduce the prevalence of infection causes and complications of the presence of SCI :

1. Training for proper use of different catheters (disposable and reusable or even condoms Extra.
2. Awareness of risks and adverse effects of infectious agents that threaten them.
3. To learn how to deal with sexual problems especially those with psychiatric counseling and family counselors.
4. Extra training in order to more appropriately assist people with spinal cord injury in the context of everyday life and the psychological problems.
5. appropriate and necessary treatment of various infections of urinary tract in men, especially or genital infections are spread by close members of biogram carefully because they contain more resistant germs.
6.. Education to patients and caregivers to prevent bed sores and the treatment of wounds as a source of infection (Chapter IV).
7. Proper training and regular urination and defecation and personal hygiene principles.
8. Note for regular visits to infertility centers, especially those don't have ejaculation ability voluntary or reflex.
9. Finally development of programs to prevent long-term immobilization and awkward positions and filling their leisure time by sports and other entertainment with possible tailored to each individual situation.

Total cases = 410 cases

WBC Total WBC count percentage and cumulative frequency cumulative frequency in two groups.

cumulative frequency	percentage	number	**WBC**
57/8	**57/8**	**138**	**0-1**
84/6	**26/8**	**64**	**5-2**
92/5	**7/95**	**19**	**10-6**
95/8	**3/3**	**8**	**20-11**
97/1	**1/26**	**3**	**30-21**
97/5	**0.42**	**1**	**50-31**
100	**2/5**	**6**	**50>**
without spinal cord injuries		239 case	**total**

cumulative frequency	percentage	number	**WBC**
12/9	**12/9**	**22**	**0-1**
28/1	**15/2**	**26**	**5-2**
37/7	**9/6**	**16**	**10-6**
51/2	**13/5**	**23**	**20-11**
60	**8/8**	**15**	**30-21**
67/6	**7/6**	**13**	**50-31**
100	**32/7**	**56**	**50>**
with spinal cord injuries		171 case	**total**

Total: 239 records 171 records

1. (Table 1) Outline of the number, percentage and cumulative frequency of various leukocytes in subjects with and without SCI lesions
2. Figure 5 - Comparison of the overall prevalence of the presence or absence of sperm in men with spinal cord injuries and without spinal cord injuries Lykvsytvasprmy.

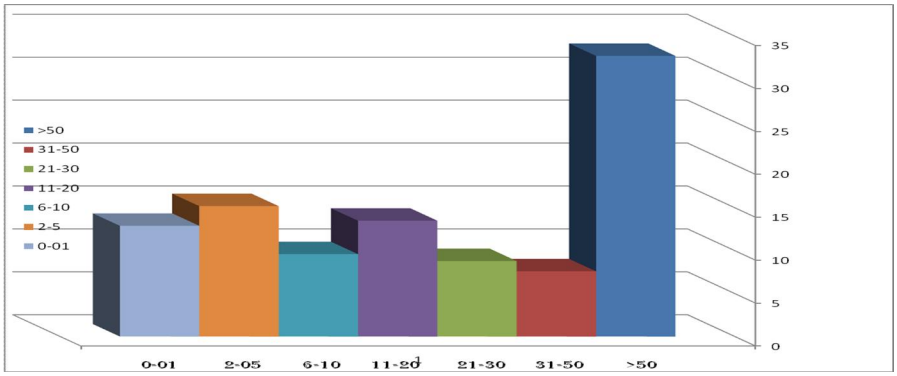


chart 1: Leukocytospermia prevalence in people with spinal cord injuries per percentage

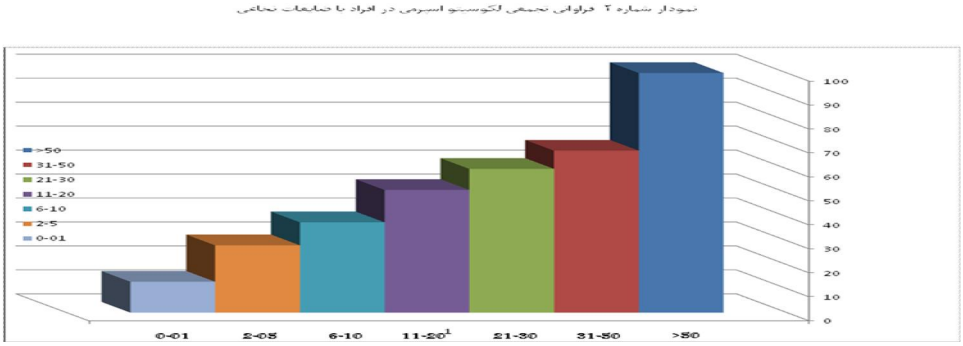


chart 2: Cumulative frequency of Leukocytospermia in people with spinal cord injuries

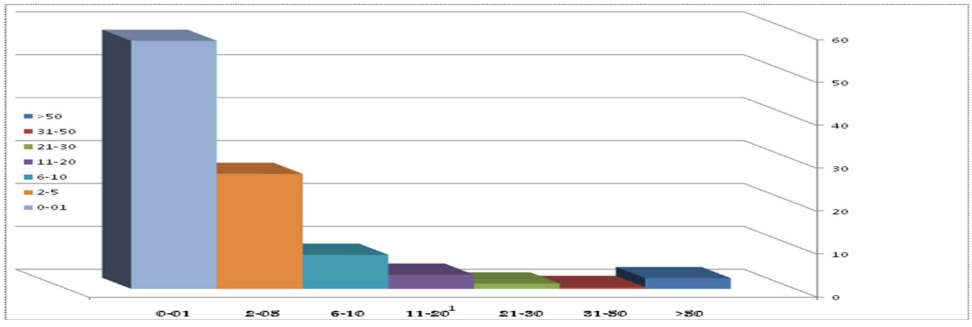


chart 3: Prevalence Leukocytospermia percentage in those without SCI

نمودار شماره ۴ فراوانی تجمعی لکوسیتواسپرمی در افراد بدون ضایعه نخاعی

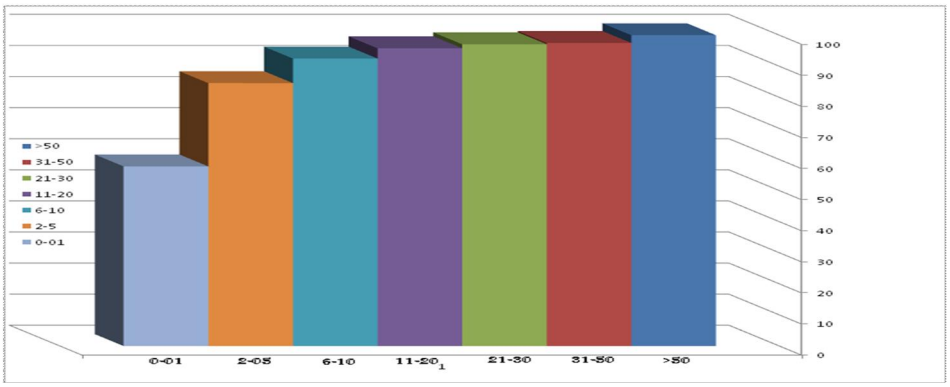
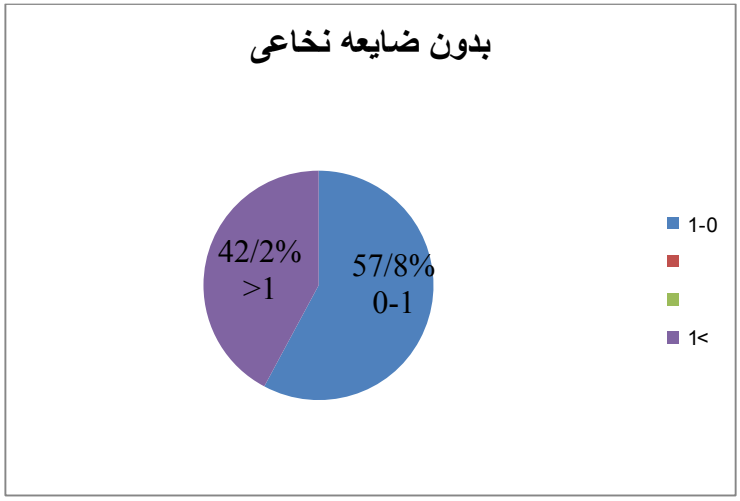
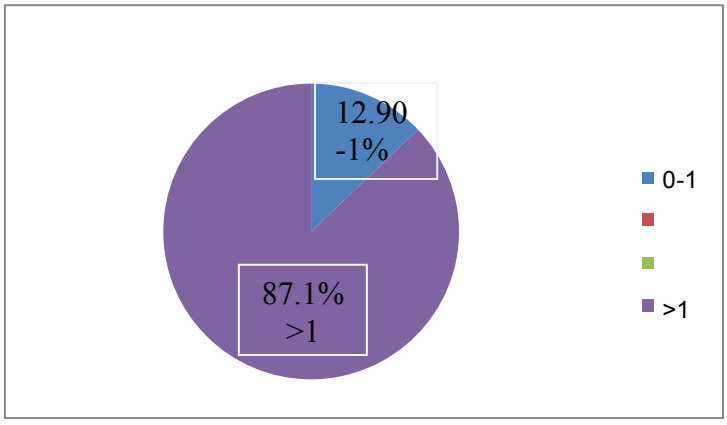


chart 4: Cumulative frequency of Leukocytosperm in those without SCI



With SCI



Without SCI

Resources

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