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TOTAL LEUCOCYTES IN HUMAN SEMEN OF NORMAL AND PATHOLOGIC ORIGIN

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ABSTRACT

Total Leucocytes were counted by using 0-toulidine, in one hundred and thirty nine semen samples of normal and pathological origin. The values of all the samples had fallen almost in the same range. However significant difference in mean value was seen in oligo-asthenozoospermia ($p < 0.05$).

INTRODUCTION

Several functions are designated to leucocytes in blood. They have their roles to play in normal and pathological tissues. Leucocytes are also seen in other body fluids like cerebrospinal fluid and gastric juice. It is very commonly observed in human semen. At present we are not certain about the functions of these cells in semen. It is also surprising that we are not having the knowledge of the total number of leucocytes in semen. In this context the present study is undertaken to establish the norm and to find out changes in infertility, if any.

MATERIAL AND METHODS

A total of 139 semen samples were used in this study. The subjects and patients submitted the samples, after maintaining an abstinance of 3 to 5 days (5), into clean and dry glass containers supplied by us. The samples were examined for the quality (1) and each one was included in one of the groups shown in Table 1 (4). The samples included in the normozoospermia were either from husbands with fruitful marriage or from donors who were clinically healthy whereas that of Pathological groups belonged to patients reported for infertility investigations. Leucocytes were counted in each sample by using a W B C pipette and modified Neubauer chamber.

The sample was taken up to 0.5 mark and diluted by using O-toulidine as suggested by Nahoum and Cardozo (3). The modification we adopted on the solution wash change in the concentration of stain from 0.15% to 0.05 % . This reduced overstaining of cells. We preferred very minimum amount of hydrogen peroxide.

RESULTS

Result of the study is presented in Table 1. A comparison of the values of normozoospermia was done with pathological groups (Tabla II))

DISCUSSION

Whenever semen is evaluated the number of leucocytes in it is reported as its number per field. The presence of these have been considered as a sign of infection and inflamation. Leucocytes were also mistaken for premature sperm cells. It is difficult to count leucocytes in semen. This might be the reason for limited number of such studies (2,6). Recently a method was introduced to overcome this difficulty (3). Adopting slight changes (described earlier) in the staining solution lead to good results.

The value presented for normozoospermia is much lower than reported by earlier workers (2,6). This may be due to the difference in techniques employed as well as criteria accepted for normozoospermia. Svendson (6) considered above 60 million/ml. sperm count as normal whereas in the present study the lower limit was treated as 40 million/ml. and 60 % motility of spermatozoa. Morton (2) did not specify any.

Looking into table I, one does not see any change in the values of range for fertile and infertile groups. However, there was a significant difference in mean value of oligoasthenozoospermia (Table II). One of the causes for less number of motile spermatozoa in a sample is believed to be infection and inflamation of the reproductive tract. Leucocytes are known

TABLA I

THE LEUCOCYTE COUNT IN SEMEN OF NORMAL AND PATHOLOGICAL ORIGINS

	Sperm count in million	Percentage of sperm motility	Number of samples	Range	Mean ± SE
Normozoospermia	40	60	41	150-1300	755.49 ± 52.18
Oligozoospermia	40	60	17	450-950	751.47 ± 34.49
Oligoasthenozoospermia	40	60	51	125-1400	598.04 ± 42.78
Azoospermia	No spermatozoa seen even in deposit after centrifugation		30	225-1650	865.0 ± 67.56

TABLA II

COMPARISON OF NORMAL SEMEN TOTAL LEUCOCYTE COUNT WITH PATHOLOGICAL GROUPS UNDER STUDY

Comparison	't'	'p' value
Normozoospermia vs. Oligozoospermia	0.0476	$P > 0.1$
Normozoospermia vs. Oligoasthenozoospermia	2.356	$p < 0.05$
Normozoospermia vs. Azoospermia	1.303	$p > 0.1$

to increase their number in such cases. A reverse pattern is seen here. The decrease in oligoasthenozoospermia and increase in azoospermia observed in the study is not explainable, at present. The further study alone can throw light on this.

RESUMEN

Leucocitos totales en semen humano de origen normal y patológico, *Skandhan K. P. (Department of Physiology, Government Medical College, Surat 395 001, India), Gusani P.H.* **Invest Clín.** *27 N° (4):*225 - 229 1986.– Leucocitos totales fueron contados usando O-toulidine en ciento treinta y nueve muestras de semen de origen normal y patológico. Los valores de todas las muestras cayeron significativamente casi en el mismo rango. Sin embargo fue encontrada una diferencia significante de valor promedio en oligoasthenozoospermia ($p < 0.05$).

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