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SPECIFIC FEATURES OF SPERMATOGENESIS MALE AND SPERM

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The species features spermatogenesis and sperm of males. For each type sires duration of spermatogenesis genetically determined and does not change. Term promotion of sperm via an appendage testis depends on the frequency of ejaculation and does not stop even in the absence of ejaculation. Average performance ejaculate with species specificity and appropriate response.

Males, spermatogenesis, sperm, ejaculate, sperm motility.

Fertilization insemination in females is largely dependent on the quality of sperm. Sperm mammals consists of two main parts: the sperm - gametes and sperm plasma - a mixture of secretions of the testes, and additional appendages glands, which is a liquid medium for sperm and source of nutrients for them. Sperm – carriers of genetic information, have a similar structure and consist of four main morphological parts - head, neck, body and tail. The most characteristic like a spoon flagellated form occurs in animals with external fertilization as well as with internal [1, 2, 3, 4, 5, 6].

The aim was to study the characteristics of sperm cytomorphologycal, speed of movement and features of spermatogenesis and sperm of males of some species of mammals.

Materials and methods research. For the experiment for the study of spermatogenesis and sperm characteristics of certain types of male and beginning of spermatogenesis was determined after castration. Of testes and their appendages produced prints and histopreparaty that fixed, stained and examined under a microscope stage of spermatogenesis, availability formed sperm. The study of the structure and measurements carried out sperm from the semen of animals which received an artificial vagina, manual or after castration testis with epididymis by

the method of EP Steklyenova, 2005. Evaluation of semen was by "Instructions artificial insemination", 2003.

Results. Cytomorphologycal sperm characteristics of different types of human males and speed of their movement is given in Table 1. The total length of sperm ranges from 37 to 80 microns, the shortest spermatozoa observed in boars longest - the bull. The head is shaped slightly distorted oval plate vhnutoyi on one side. In the middle of the sperm head is the kernel. Head with a short neck and a thin elongated body connected with sperm that goes into a long and thin tail. The bodies of sperm movement is the body and tail. The body during movement is straight and is the backbone for the tail, which makes frequent strikes, pushing forward sperm. Active sperm in the fluid moving in a straight line and forth, impaired sperm moving in a circle - Foyer movement or swing in one place - oscillatory motion.

1. Cytomorphologycal sperm characteristics and rate of movement

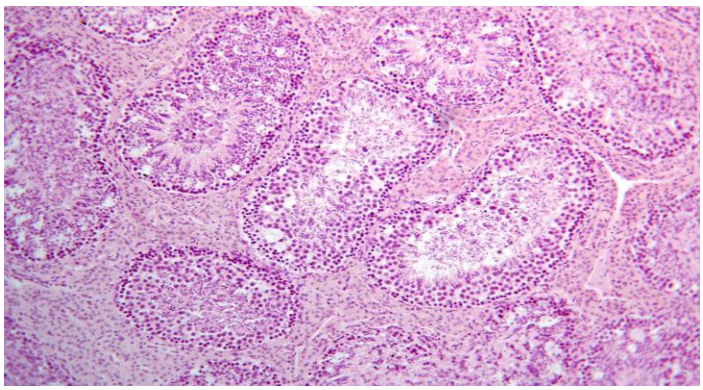
Males of some species of mammals	Sperm length and its components, mkm					Speed, mkm / s
	um speed	total head	neck	body	tail	
Bulls	61-80	8-10	0,8-1,0	8-13	44-53	94-150
Sheep	65-75	7-8	1,0-1,5	11-13	42-44	45-85
Stallion	58-60	6-7	0,2-0,3	9-10	42-43	75-90
Boars	37-65	7-12	0,7-1,0	10-12	30-38	30-80
Dog	60-62	5-6	0,8-1,0	8-11	41-46	35-95
Male	52-53	4-5	0,9-1,0	5-6	40-60	30-50

The important quality characteristics of sperm is their mobility, life expectancy and the fertilizing capacity, which depends on the composition, temperature and pH, osmotic and oncotic pressure and others.

The capacity for independent movement is one of the most important properties of sperm, they move on the horns of the uterus and oviduct accumulate around the egg, penetrate its transparent shell peryvitelinovyy in space and fertilize the egg.

Loss of sperm motility does not always indicate their death, observed that normal sperm movement occurs periodically. Active, energetic sperm can stop if a rest, but after a while begins to move again. Boar spermatozoa, unlike sperm bull, sheep and other moving mainly in large arcs with diameters ranging from 10 to 100 microns. Speed of boar spermatozoa native within 30-80 mkm / s, which is much less than in bull sperm (94-150 mkm / s).

At the lumbar section boar testis seminiferous tubules (drawing 1) shows 4-5 generations of cells spermatogenic epithelium located layers at different stages of development. Close to the shell seminiferous tubules are the cells most of the young generation, and then towards the middle of the age of each subsequent generation increases. Depending on the time for the development of spermatogenic cells, cell picture associations in each site sim'yanykovoho tubule changes.



Drawing. 1. Lumbar sections boar testis seminiferous tubules (hematoxylin by Boehmer, eosin. 120 ×)

The process by which cells in association testicle tubule area at some point in the cycle is repeated spermatogenic epithelium. Part of the series, which is characterized by a combination of determination of cells called the stage of the cycle spermatogenic epithelium.

Great practical importance to determine the length of time promoting spermatogenesis and sperm through the epididymis of the testes. This allows you

to set a time when certain Paratype factors influence the quality of ejaculate, determine the causes of deterioration of sperm quality, the right conclusions about the feasibility of using sires, carry out preventive measures.

Application of isotopes and X - radiation allowed to set the duration of spermatogenesis as a whole and its individual stages. According to Table 2 cycle spermatogenic epithelium longest in humans is 16 days and the shortest in boar - 8.6 days respectively.

2. Specific features of spermatogenesis and sperm of males

The males of different species of mammals	Duration, d		Average performance			
	cycle-cum-pathogenic epithelial	sperm	ejaculate volume ml	concentration sperm, billion / ml	mobility sperm, %	pathological sperm, %
Bulls	13,4	61-63	3-5	0,8-1,2	80	18
Sheep	10,3	47-49	0,8-2	2-3,5	80	14
Stallion	9,6	42-43	40-120	0,15-0,2	60	20
Boars	8,6	35-40	250-500	0,2-0,3	70	20
Dog	13,6	56-57	2-30	0,36-0,80	80	14
Male	16	74-75	2-7	0,02–0,25	70	20

Duration of spermatogenesis depending on the type males ranging from 35 days to 75 days to boar in humans. Research has demonstrated that the duration of spermatogenesis - constant. This figure does not affect gonadotrophin, feeding and other factors Paratype. It is likely that in the middle of germ cells exist exact mechanism that regulates the speed of the process of transformation.

Details of the process we explored in semen of boars-sires. The formation of sperm must spermatohoniy 35 days, and their promotion through testicular

appendages another 10 days. Changes in feeding influences increase semen sires over 15-40 days. Quicker response observed in bulls as you type them oxytocin, parasympatykotropnyh drugs gonadotropin hormones, analogues of prostaglandin $F_{2\alpha}$. The use of boars-sires of these drugs immediately increases to 50-60% of their semen, she kept at this level for a long time. That there is a mechanism in the testes that lets you increase the level of spermatogenesis. On the other hand decreases in the number of sexual load of sperm in the ejaculate decreases sharply, that there is a feedback mechanism - the rapid decrease in the number of sperm in the ejaculate when the need of them.

Increase and decrease sperm is not explained by processes that occur in the testes and appendages change stockpiling them sperm. Rolling stock of sperm in the testis appendages boar is estimated at 60-70 billion, and the total stock of 175-200 billion. The level of daily sperm formation in adult boars is 15-16 billion, but even after a long rest in sexual appendages found in hogs up 300 billion sperm.

Prolonged sexual males peace process degeneration of germ cells increases. Therefore appendages goes far fewer sperm and increases the process of decomposition. Depending on the amount of intake appendage young sperm numbers and sperm deheneruyuchyh old stocks in the appendage may increase or decrease. Therefore, even after prolonged sexual rest in males ejaculate first nekrospermiya not observed, and sperm can survive and mobility in the testis appendages to 40 days.

Males with a seasonal period of sexual rest (ram Dog) in the first ejaculate can nekrospermiya, oligospermia and azospermiya. This is due to the fact that these males during spermatogenesis rest fades and flow of sperm in the epididymis decreases and stops. The process of degeneration of spermatogenic epithelium cells creates resting energy storage and nutrients that remain in the body and is a reserve in the breeding of animals.

The concentration of sperm in semen boar 10-15 times less than that of a bull and a ram. Sperm do not stick together because they have a negative electrical charge, which causes mutual repulsion, and thick ejaculate and ordered their

movement in one direction - reotaksys. Reduction or loss electric charge is only a partial sticking heads or full – agglutination. This phenomenon occurs when lowering the pH below 6 and storage of sperm.

Conclusions and prospects for further research. Cytomorphologycal characteristics of different types of male sperm indicates that sperm have a similar structure, but their sizes are species feature.

Duration of spermatogenesis genetically determined and does not change during the life of sires. Promotion sperm via an appendage testis depends on the frequency of ejaculation and does not stop even in its absence.

Average performance ejaculate semen characterize males. Mobility is one of the main indicators of physiological, biochemical and morphological status of sperm. The velocity of sperm is large enough and can vary between 30-150 m / s.

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