

TOTAL REPRODUCTIVE OUTPUT OF COWS WITH OVARIAN CYSTS FOLLOWING THE FIRST PARTURITION

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Sixty five cows exhibiting ovarian cysts after the first parturition delivered less calves, showed longer intervals between pregnancies, and much more were affected with cystic ovarian disease than 130 control cows displaying no ovarian cysts after the first calving.

Studies on cystic ovarian disease (COD) in cows did not explain conclusively the aetiology of this disorder. According to some investigations the disease is conditioned by the hereditary predispositions (2, 3, 4), whereas other authors suggest that an essential role in its aetiology play environmental conditions (1, 5). Our many year' studies (6) indicate that both factors have an important part in the aetiology of the disease. A distinct seasonal occurrence of COD, causing a regular curve of incidence rate of the diseases in cows after calving in particular months, with the highest point (24.4 per cent) in September and the lowest point (8.9 per cent) in April, may indicate the dominance of the environmental factors. On the other hand, some cows being kept in the same environment were not affected with COD in their life whilst a considerable number of animals was affected with COD three or even four times. This may indicate that an essential role is played there also by the hereditary predispositions.

Since the aetiology of the disease was not exactly delineated it was impossible to apply effective prophylactic methods. Treatment allows to prolong the exploitation period of a considerable number of cows affected with COD, but it restricts the natural selection of cattle population increasing the percentage of animals susceptible to the disease, and the number of progeny with hereditary predispositions.

Early detection and elimination of animals susceptible to COD may be an effective prophylactic method preventing the spreading of the disease. It may be assumed that most of individuals with hereditary predisposition are taken with COD early, just following the first parturition. Taking into consideration, that 10—12 per cent of primiparous

cows in populations of high productivity is affected by COD, and shows hereditary predisposition to the disease, early eliminating of these animals or at least their offsprings from the breeding should be taken into account. The question arises whether primiparous cows affected with COD, are less fertile than unaffected ones. The aim of the following study was to compare the total reproductive output of cows affected with ovarian cysts following the first parturition with that of unaffected ones.

Material and Methods

The investigations were carried out in 5 state farms. The mean milk yield throughout observation period was 4764 kg per cow in a farm of the highest production, and 3034 kg in a farm of the lowest production. Ovarian cysts were diagnosed after about 6 per cent of parturitions in cows from the farm of the lowest milk production and after about 16 per cent in cows from the farm of the highest milk production. Systematic veterinary supervision of the reproduction in these farms was conducted by the author for 10—12 years.

Life fertility was analysed in 65 Holstein-Friesian cows which displayed ovarian cysts after the first calving and 130 cows which developed no ovarian cysts after the first calving. Altogether 220 sexual cycles in the first group and 675 in the second group were studied. The investigated cows were discarded due to incurable infertility or senility. The following parameters were analysed: age, number of parturitions, conception rate, service period, number of gynaecological treatment per one conception, and incidence rate of ovarian cysts.

Results

The investigations of the life fertility of 65 cows in which ovarian cysts were diagnosed after the first calving gave the following results: the mean age of these animals was 6.5 (3—9) years; during this time the cows delivered on an average 3.7 (1—8) calves; the conception rate was 41.2 per cent; the mean service period lasted 150.9 days; 1.26 gynaecological treatments per one conception were performed; ovarian cysts were diagnosed after 45.9 per cent of parturitions.

The results of the examination of 130 cows which showed no ovarian cysts after the first calving were as follows: the mean age was 7.7 (3—13) years; at this time on an average 5.5 (1—9) calves were born; the conception rate was 45.5 per cent; the mean service period amounted to 122.8 days; 0.46 gynaecological treatments per one conception were done; ovarian cysts occurred after 16.0 per cent of parturitions (Table 1).

Table 1

Some fertility parameters in cows which displayed ovarian cysts after the first calving compared with controls

Group	No. of cows	Mean age	Mean No of calves delivered	Service period (days)	Conception rate	No. of treatments per conception	Incidence rate of ovarian cysts
Control	65	6.5	3.7	150.0	41.2	1.26	45.9
Experimental	130	7.7	5.5	122.8	45.5	0.46	16.0

Discussion

The present studies indicated that cows which developed ovarian cysts after the first calving exhibited markedly lower life fertility. Their mean age was shorter by 1.2 years and they delivered by 1.8 less calves than did control animals. These cows showed longer, on an average by 28.1 days, service periods, required by 0.8 more gynaecological treatments and displayed almost threefold higher incidence rate of ovarian cysts than did control group. It seems that the obtained differences in fertility parameters between two groups compared were abolished due to systematic therapy of the fertility disorders occurring during observation period.

The results of the investigations of some fertility parameters indicate that the occurrence of ovarian cysts in cows which calved once is unfavourable regarding the prognosis of their fertility. Prevailing majority of these animals showed lowered life reproductiveness and, as a consequence, reduced milk yield. Because of these reasons the cows should not be allowed to breed freely, and their offsprings should be destined for the slaughter.

It was demonstrated that life fertility of COD-affected primiparous cows is comparatively low and such animals are decidedly more susceptible to COD.

However, these investigations provided no information whether the hormonal disturbances found in our COD cases were due to hereditary predisposition or to reduced adaptation ability to environmental conditions, which is conducive to arising of such disturbances. The later suggestion may be supported by fact that the incidence rate of COD is noticeably dependent on environmental conditions and on degree of the milk production.

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