

## Dynamics of dry cow's mastitis

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*Duration and outcome of subclinical and clinical mastitis of nonlactating cows have been studied*

**Key words:** mastitis, induration, atrophy.

Bovine mastitis is the most costly disease to dairyman, most economic loss from this disease results when cows produce less milk and are culled, milk must be discarded from cows showing signs of inflammation and from those undergoing antibiotic treatment [1,2]. Mastitis can be beginning under different physiological state of cows reproductive system. But at the end of lactation and at the dry period incidence of mastitis increases. When in udder maintain great morphological, microanatomy, biochemical changes [3,4]. The data about duration and outcome dry cows mastitis are very scanty and contradictory.

**Aim of the investigation.** Duration and outcome of clinical and subclinical mastitis of dry cows have been studied.

**Materials and the methods of investigation.** Research were carried out at milk farms CAF "Rodina" Saratov region and Ltd "Agrofirma Petrodolynskoe" Ovidiople region of Odessa.

The subclinical mastitis is diagnosed before the end of lactation by universal indicator of mastitis "Don-1" during dry period by visual express-method, proposed by N.L.Polyantsev, and L.G.Roman. This method is based on the delay of postlactative involution of diseased udder's quarters for 2-3 weeks, as results the formation of secretion (serka) delays quarters. The at the middle of dry period in health secretion has thick consistation (as may homey), the good stickiness, yellow color and vacuum 1-2 ml. The secretion from affected quarters was identical to some from healthy quarters an 10-th day of dry period.

Besides, we examined mammary gland two weeks after the last milking and 7-10 day before calving; the sample of secretion were examine by visual and cytological methods at middle of postlactating period (30-35 th days). Recognizing and differentiation forms of clinical mastitis cows we used proposed by us scale of differentiate evaluation dry cows clinical mastitis.

**The results of investigation.** The scientific experience of opportunity of transition untreated during lactation subclinical mastitis to clinical one of dry period at milk form Ltd "Petrodolynskoe" has been proved.

Before the last milking examined the milk of each cow with the aid of a strip cup. 201 cows have examined. On 61 cows the subclinical mastitis has been estimated (30,34%); the index of affection is 1,39. The clinical mastitis has been estimated in 17 cases and 24 quarters.

The dry cows on experience have been diagnosed twice with 15-th day interval; on 21 cows (34,4%) the transition subclinical mastitis in clinical one has been constated. Simultaneously on 60 cows with negative test-reaction on 4 cows (6 quarters) the clinical mastitis has been estimated – that in 5,2 time less than on group with positive test-reaction.

Thus, the connection of frequency of clinical mastitis dry cows with untreated subclinical one of lactation period have been proved. On 15-th day of dry period the subclinical mastitis is persisted in 40 cows (60 quarters)(table 1).

We established the transition of the subclinical mastitis in clinical one at the middle of dry period on 5,88% cases.

New cases cows' of mastitis with negative test-reaction have been not redistricted.

Table 1. Duration and outcome of subclinical mastitis of dry cows under spontaneous duration

State of udder's quarters	Index			
	cows	%	quarter	%
Duration of mastitis				
Subclinical mastitis cows before the last milking	61	30,31	85	10,57
Persistence of mastitis:				
the first 15 days	40	65,57	60	70,59
from 16-th to 30-th days	27	44,26	38	44,71
from 31-th to 50-th days	24	39,34	31	36,47
Transition on clinical mastitis:				
the first 15 days	21	34,42	25	29,41
from 16-th to 30-th days	2	3,28	5	5,88
from 31-th to 50-th days	3	4,92	7	8,24
Self-recovering:				
the first 15 days	-	-	-	-
from 16-th to 30-th days	11	18,03	17	20
from 31-th to 50-th days	-	-	-	-
New cows of mastitis:				
the first 15 days	-	-	-	-
from 16-th to 30-th days	-	-	-	-
from 31-th to 50-th days	3	4,92	6	7,06
Outcome of mastitis				
Atrophy	3	4,92	5	5,88
The transition to clinical mastitis	26	42,62	37	43,53
Self-recovering	11	18,03	17	20

On 50-th day of dry period cows with positive test-reaction on "Don-1" we estimated the transition the subclinical mastitis to clinical one and new cases of diseases in 8,24 and 7,06%.

Simultaneously, we redistriated new cases of the subclinical mastitis on 3 cows and six quarters of udder, and 4 quarters.

Thus, from 60 cows with negative test reaction before the last milking on 52 cows after calving (86,7%) mastitis have been not estimated.

Outcome of the subclinical mastitis at the next lactation were: atrophy affected quarters of udder in 5,9% cases, persistation to calving – 36,5%, transition to the clinical mastitis – 43,5%; in 18,03% cases self-recovering have been established.

Table 2 demonstrated data of duration and outcome of the clinical mastitis.

The clinical mastitis of the end of lactation persisted during the dry period (the cases of self-recovering not redistriated); besides, intensification of sick quarters increased from 1,41 to 1,7 as result of spreading inflammation on neighbouring healthy quarters. New cases of clinical purulent-catarrhal mastitis on 23 cows (29 quarters) have been estimated; moreover handsome majority fall on destructive phase of udder involution. This inflammatory process maintained during the dry period and outcomed into chronic one. Only a three cases flegmona and the list have been estimated. In 8 cows the beginning of lactation intensification of purulent-catarrhal mastitis have been provoked with transition into purulent and purulent-fibrose inflammation.

Table 2. Duration and outcome of dry cows clinical mastitis

Index	Index			
	cows	%	quarters	
			of groups	amount
Duration of mastitis				
Indicated cows on the of lactation	17	8,45	24	2,99
Diseased at on the of lactation	23	11,3	29	3,61
the first 15 days	21	10,44	25	3,11
from 16-th to 30-th days	-	-	-	-
from 31-th to 50-th days	2	0,99	4	0,49
Involved neighbouring	8	3,98	13	1,62
Complication:				
thelitis	2	0,99	3	0,37
flegmona	1	0,49	2	0,25
Outcome of mastitis				
Induration of parenchyma	4	10	5	7,58
Scaring of cysterna	4	10	4	6,06
Obliteration of milk duct	3	7,5	5	7,58
Intensification	8	20	10	15,15

Simultaneously, induration of parenchyma, scaring of milk cistern, obliteration of milk ducts have been indicated as a result of prolonged purulent-catarrhal mastitis .

### **Conclusion**

1. In 100% cases untreated clinical mastitis of lactating period persisted to calving; in 3,98% cows the spreading inflammation to healthy neighbouring quarters have been estimated.
2. In 15,15% cases outcome of the clinical mastitis ware sharpening with transition to post-natal serose-purulent or purulent-fibrinose mastitis, induration of parenchyma, scaring of milk cistern, obliteration of milk ducts.
3. In 43,5% cases the subclinical mastitis of the end of lactation transfers to clinical one; in 36,5% cases persisted to calving; in 18,03% cases-take place self-recovering.

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