

Prevalence of congenital defects of cattle and goat in Bangladesh

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ABSTRACT

The study was conducted at the different areas of Bangladesh during the period from July 2011 to December 2011. A total of 7145 animals were examined based on clinical signs and history of the patients. The data represent that only 46 (0.64%) animals out of 7145 animals (cattle and goat) were congenitally defective. The animals were classified according to species, type of congenital defects and body system involvement. It is observed that cattle (0.80%) were more prone to congenital defects than goat (0.21%). Among the different types of congenital malformations atresia ani was highest representing 50% followed by bent leg (16.66%), tongue deformity (4.76%), congenital skin outgrowth (2.38%), dermoid cyst (7.14%), gum carcinoma (2.38%), inherited hypotrichosis (2.38%), neonatal neck paralysis (2.38%) and neonatal blindness (11.90%) were and respectively for cattle. In case of goat all four cases were atresia ani that involved the digestive system. The digestive system involvement was higher (57.14%) than musculo-skeletal system and ocular system that makes up 23.81% and 19.05% respectively. Congenital defects are not most common in Bangladesh and the economic effects of congenital defects is not as high as compare with that of other diseases that have high economic effects. Therefore, further study should be conducted by selecting the more areas to make a consensus of congenital defect in Bangladesh. Research should be carried out in order to find out the causes and source of the deformities and thus taking necessary measure to control them.

Key words: Congenital defects, cattle, goat, Bangladesh.

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INTRODUCTION

Animals and poultry birds are the substantial sources of farm income. The number of bovine animals per household is only 1.25 and that of poultry is 7.10. Therefore; it appears that there lies little scope of earning incomes and to supply milk, meat and eggs. But there are ample potentials of increasing production of milk, meat and eggs in the country with proper care conservation and development of livestock resources (Shajahan M, 2001).

Congenital means present at birth and is not synonymous with hereditary (Samad MA, 2008). Congenital defects can result from defective genetics or from an insult or agent associated with

the fetal environment or their interaction, and are classified as lethal, sub-lethal or non-lethal (Leipold *et al.*, 1983). The frequency of individual defects varies with the species, breed, geographic location, season and other environmental factors. The incidence is estimated to range from 2 to 3.5% of all birth calves, lambs and foals (Aiello, 1998).

The congenital defects in animal may involve in musculoskeletal system, respiratory system, alimentary tracts, central nervous system, abdominal wall, urogenital system, cardiovascular system, skin (Blood, 1989). Congenital malformations cause perinatal mortality, decreasing maternal productivity, decreasing individual performance and reducing the value of defective

neonates. Studies on congenital defects were very limited in Bangladesh. Some studies were done by Samad, 2002, Radostits et al., 2000, Slatter, 1987, Das and Hashim, 1996 and Rahman et al., 2006. However the present study was conducted to observe the prevalence, types of congenital defects and their body system involvements for cattle and goat in some selected areas of Bangladesh.

MATERIALS AND METHODS

The study was conducted at the different selected areas of Bangladesh from 10 July 2011 to 08 December 2011. The selected areas were Kaunia, Gangachara and Sadar upazila of Rangpur district; Sadar upazila of, Dinajpur; Sadar upazila of Barisal district; Sadar upazila of Chittagong district; Sadar upazila of Mymensingh district; Begumganj upazial of , Noakhali district; Kulna Sadar; Sreepur of Gazipur; Chhatak of Sunamganj; Ghatail of Tangail and Cox's Bazar Sadar of Bangladesh. A total of 7145 animals were observed with necked eye for congenital defects of which cattle and goats were 5225 and 1920 respectively. The congenital defects were classified according to the species, type of defects and body system for cattle and goat in Bangladesh (Samad MA, 2002).

RESULTS AND DISCUSSION

Total numbers of animal were 7145 among which 46 animals were affected with the congenital anomaly.

Table 1
Overall prevalence of congenital defects of cattle and goat.

Species	Total Animal	No. of congenital defects	Percentage (%) of congenital defects
Cattle	5225	42	0.80
Goat	1920	04	0.21
Total	7145	46	0.64

The prevalence of congenital defects of cattle and goat at different selected areas of Bangladesh is represented in Table 1 and Table 2. The total number of genetically defective animals are 46

(0.64%) of which 0.80% and 0.21% cattle and goat, respectively. The results of this study differ from the other study where congenital anomalies represented an overall prevalence of 0.51% (54 out of 10509 all type of sick cattle) (Samad, 2002).

The prevalence of atresia ani (Figure A,L) were very high (50%), where as tongue deformity (Figure C), gum carcinoma, bent leg (Figure D,E), congenital skin outgrowth (Figure G), inherited congenital hypotrichosis (Figure H), neonatal neck paralysis (Figure I), Dermoid cyst (Figure B), and neonatal blindness (Figure F) were low constituting 4.76%, 2.38%, 16.66%, 2.38%, 2.38%, 7.14% and 11.90 % respectively. In case of goat all four cases were atresia ani. This result agrees with the finding of Samad, (2002) who reported higher prevalence (48.48%) of atresia ani.

The congenital defect of cattle and goat involve different system or organ (Table 4). The study revealed that the involvement of digestive system was 57.14%. Musculoskeletal system and ocular system were involved less frequently constituting 23.81% and 19.05% respectively for cattle. In case of goat digestive system was involved for all four cases. A study on bovine congenital defects was carried out in Bangladesh and the distribution of congenital defects as per body system showed more involvement of digestive system (37.04%), followed by muscular-skeletal system (24.07%) and less frequently involvement were ocular (7.14%) and hematopoietic (1.87%) systems (Samad, 2002).

CONCLUSION

The prevalence of congenital defects is not so high compared to other diseases in animal in Bangladesh. Although the number of defective animal is not high but the genetically defective animal is burden for the farmer in bother economically and socially. Farmer could neither sell the animal nor consume the meat of the animal. Killing the defective animal is inhuman. Since the defects are genetical the correction of defect is either impossible or costly. Further research is needed to identify the causes and source of the deformities and measure need to be

taken to prevent the birth of congenitally defective animal in Bangladesh.

Table 2

Prevalence of genetically defective cattle and goat in different areas.

Study areas	Total Animal	Total No. of GDA*	% GDA	Total Cattle	Total GDC**	% GDC	Total Goat	Total GDG***	% GDG
Kaunia, Rangpur	600	4	0.66	375	3	0.80	225	1	0.44
Sadar, Rangpur	500	3	0.60	350	3	0.85	150	–	–
Gangachara, Rangpur	600	3	0.50	300	3	1	300	–	–
Sadar, Barisal	405	3	0.74	300	3	1	105	–	–
Sadar, Dinajpur	400	4	1	320	3	0.93	80	1	1.25
Sadar, Chittagonj	410	3	0.73	310	3	0.97	100	–	–
Begumganj, Noakhali	700	5	0.71	550	5	0.91	150	–	–
Sadar, Mymensingh	500	3	0.60	420	3	0.71	80	–	–
Sreepur, Gazipur	410	3	0.71	350	3	0.86	60	-	-
Sadar, Kulna	850	5	0.58	600	4	0.67	250	1	0.40
Chhatak, Sunamganj	600	3	0.50	400	3	0.75	200	–	–
Ghatail, Tangail	700	4	0.57	550	3	0.55	150	1	.66
Sadar, Cox's Bazar	470	3	0.63	400	3	0.75	70	–	–
Total	7145	46	0.64	5225	42	0.80	1920	4	0.21

GDA*= genetically defective animal; GDC**= genetically defective cattle; GDG***=genetically defective goat

Table 3

Different type congenital defects in cattle and goat.

Congenital defects	No. of GDC	% GDC	No. of GDG	% GDG
Atresia ani	21	50	4	100
Tongue deformity	2	4.76	-	-
Gum Carcinoma	1	2.38	-	-
Bent Leg	7	16.66	-	-
Congenital skin outgrowth	1	2.38	-	-
Inherited congenital hypotrichosis	1	2.38	-	-
Neonatal neck paralysis	1	2.38	-	-
Dermoid cyst	3	7.14	-	-
Neonatal blindness	5	11.90	-	-
Total	42		4	

GDA*= genetically defective animal; GDC**= genetically defective cattle; GDG***=genetically defective goat



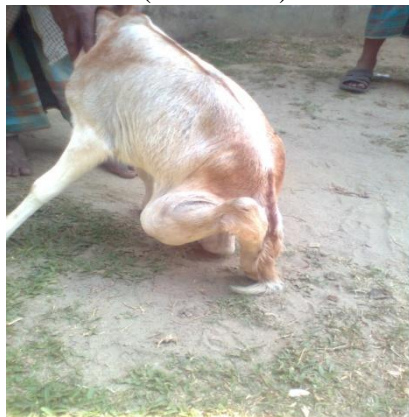
A (Atresia ani)



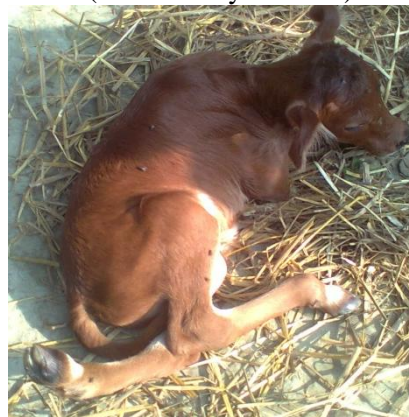
B (Dermoid Cyst in calf)



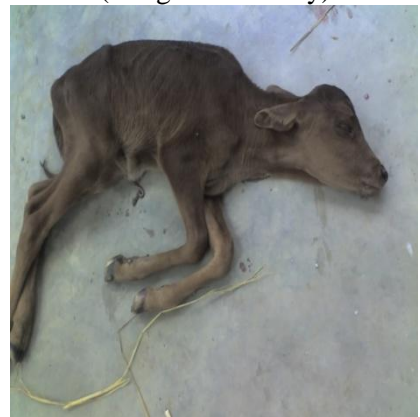
C (Tongue deformity)



D (Bent leg)



E (Bent leg)



F (Neonatal blindness)



G (Congenital skin outgrowth)



H (Inherited congenital hypotrichosis)



I (Neonatal neck paralysis)

Figure A-I
Congenital defect in cattle and goat in Bangladesh.

Table 4
Types of congenital defects according to the body system.

System of body	Total congenital defects	Congenital defects in Cattle	% congenital defects in Cattle	Congenital defects in Goat	% congenital defects in Goat
Digestive System	27	24	57.14	4	100
Musculo- Skeletal System	10	10	23.81	-	-
Ocular System	9	8	19.05	-	-
Total	46	42		4	

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