

## Colisepticaemia in Broiler: Prevalence and Pathology

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**Abstract:** The studies were carried out to record the prevalence and pathology in different age groups of broiler. The clinical symptoms observed were dullness and depression with elevated body temperature, loss of appetite and diarrhoea. Gross pathological lesions indicated clotted blood beneath the heart, caseous exudate in air sacs, fibrinous pericarditis and perihepatitis. The rate of infection varied with age as 3.11, 6.74, 20.18, 29.63, 18.16 and 22.18 % in group B, C, D, E, F & G respectively. No lesion was observed in group A.

**Key words:** Colisepticaemia, *E.coli*, pathology, broiler

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### Introduction

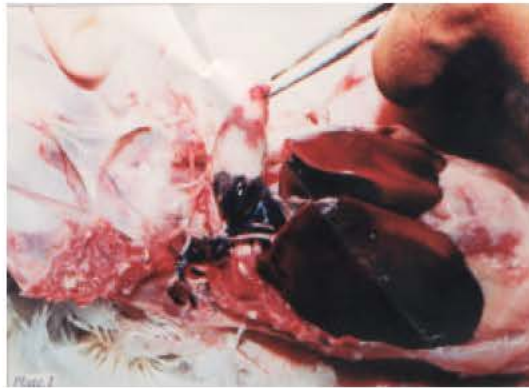
Colisepticaemia in broiler is an acute generalized form of septicaemia condition has proved to be very fatal surviving birds show reduced weight gain thus responsible for heavy economic losses to the poultry farmer. Symptomatically depression and dullness with elevated body temperature and loss of appetite along with dyspnoea and whistling sounds (Anjum, 1997). Caseous exudate in air sacs, fibrinous pericarditis and perihepatitis are characteristic features of this condition, as reported by Bierer (1962) and Gross (1957) who further more reported synovitis.

### Materials and Methods

Studies were conducted to observe the prevalence of infection gross and histo-pathological changes in various organs of broiler affected by *E.coli*. 140 broiler poultry farms in surroundings of Karachi were selected and divided in seven age groups each having 20 farms (A, B, C, D, E, F and G) Group-A represent broiler of 1<sup>st</sup> week, group-B (2<sup>nd</sup> week), group-C (3<sup>rd</sup> week), group-D (4<sup>th</sup> week), group-E (5<sup>th</sup> week), group-F (6<sup>th</sup> week) and group-G (7<sup>th</sup>-9<sup>th</sup> week) respectively. Investigation were carried out from day 1 upto the marketing of flocks.

### Results and Discussion

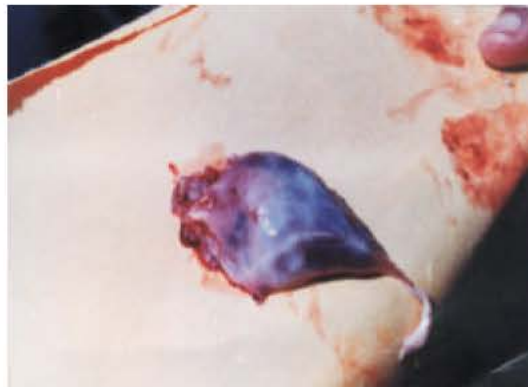
The clinical symptoms observed were dyspnoea loss of appetite, depress and dullness along with elevated body temperature.



**Fig. 1: Clotted blood in the heart**



**Fig. 2: Fibrinous perihepatitis**



**Fig. 3: Fibrinous pericarditis**

Table 1: Prevalence of colisepticaemia

Total no. of sick birds	No. of dead birds examined	No. of birds positive for colisepticaemia	No. of birds positive for other diseases
1,0504	2,491 (23.71%)	424 (17.03%)	2,067 (82.97%)

Table 2: Rate of infection observed in different age groups.

Form of infection	Age (weeks)							Total Percentage
	1	2	3	4	5	6	7	
Colisepticaemia	-	3.11	6.74	20.18	29.63	18.16	22.18	100

Present findings of colisepticaemia (17%) (Table 1) coincide to the findings of those of Cornea *et al.* (1968) who observed 8-17% mortality due to colisepticaemia.

The gross pathological lesions pertaining to colisepticaemia were observed in certain visceral organs such as liver, heart and air sacs. The most common lesions were fibrinous perihepatitis (Fig. 2), hepatomegaly with pale colored necrotic foci, fibrinous pericarditis (Fig. 3) along with clotted blood present in the heart (Fig. 1), the air sacs were found inflamed due to presence of caseous exudate. These results closely coincided to the findings of different workers. Gross (1957) investigated salpingitis in layers and panophthalmitis in chicks. Cornea *et al.* (1968) who further observed polyserositis. Piercy and West (1976) detected bilateral fibrinous airsacculitis in addition to severe pericarditis, epicarditis and myocarditis. Baliar Singh *et al.* (1993) conducted similar study in chicks and observed fibrinous pericarditis and perihepatitis. Andreatti-Filho-R.L. *et al.* (1993) also worked on the same objectives and found airsacculitis and pericarditis in most of the cases. Reddy and Koteeswaran (1994) confirmed the above statement and observed fibrinous pericarditis and perihepatitis. Kim and Tak (1983) conducted study on isolation of *E. coli* in different flocks and found pericarditis, hepatitis, airsacculitis along with emaciation. Watanbe *et al.* (1983) also observed pericarditis and congestive changes in hepatic cells and capsule, cloudiness of the air sacs in most of the cases. Pourbakhsh (1997) conducted study on gross pathology in visceral organs of chicks infected with *E. coli* and observed airsacculitis, perihepatitis, pericarditis and splenic hypertrophy.

Hundred birds were taken randomly, the maximum rate of infection with 29.63% was observed in group E were as minimum rate of infection (3.11%) was observed in group B. While no infection was observed in group A. However, the rate of infection in other groups was as 22.18, 20.18, 18.16 and 6.74% were seen in group G, D, F and C respectively (Table 2).

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### References

- Andreatti, Filho, R.L., E.N. Silva and L. Balen, 1993. Effect of route of inoculation on the pathogenicity of pathogenic and a pathogenic *E.coli* strains in chickens. Arquivo-Brasileiro-de-Medicine Veterinaria-e-Zootecima 45: 475-486.
- Anjum, A.D., 1997. Poultry disease. 2<sup>nd</sup> Ed. pp: 105-110.
- Baliar Singh, S.K., A.G. Rao and P.R. Mishra, 1993. Pathology of experimental colibacillosis in chicks. Ind. Vet. J., 70: 808-812.
- Bierer, B.W., 1962. Artificially induce *E.coli* infection in chilled chicks Poultry Sci., 41:1627.
- Cornea, I., I. Buturga, M. Risu and C. Man, 1968. Epididymological investigations of colibacillosis in chickens forms and identification of pathogenic serotypes. Luco. Inst. Cero. Bioprep. Pesteur, 5: 327-338.
- Gross, W.B., 1957. *E.coli* infection of the chickens eye. Avian Dis., 1: 36-41.
- Kim, K.S. and R.B. Tak, 1983. Studies on pathogenic *E.coli* isolated from chickens with colibacillosis. I. Biochemical and serological investigation Korean J. Vet. Pub. Helt., 7: 113-120.
- Piercy, D.W. and B. West, 1976. Experimental *E.coli* infection in broiler chickens. J. Comp. Path., 86: 203-210.
- Pourbakhsh, S.A., M. Boulianne., B. Martineau, Doize., C.M. Dozois., C. Desautets and J.M. Fairbrother. 1997. Dynamics of *E.coli* infection in experimentally inoculated chickens. Avian Dis., 41: 221-223.
- Reddy, Y.K. and A. Koteeswaran, 1994. Studies on experimental *E.coli* infection in Japanese quails. Ind. Vet. J., 71: 959-963.