**CHAPTER V**

**DISCUSSION**

Aflatoxicosis resembling from the *Aspergillus* infection in poultry can cause disease and increased morbidity with less mortality (Ibrahim *et al*., 2000; Oguz and Kurtoglu 2000; Kubena *et al*., 1998) which coincides with the experiment on mortality of experimented broiler. Eliana N. C. Tessari *et al*., 2010 described aflatoxins are a frequent problem for poultry production resulting in poor bird performance, which is caused by several factors including reduced activity of pancreatic enzymes. Similarly the weight of broilers in the present study also retardated due to aspergillosis as the infected birds ingested less amount of feed due to huge thirst, but this result is opposing to Lanza *et al*., 1980a who found no effect on growth of broilers in aflatoxicosis affected chicks between 2 to 5 or 3 to 6 weeks of age. Moreover, clinical signs like gasping, suffocation, dyspnoea, coughing and mucus through nostrils observed in the infected broilers which supported the statement ofTarkan and Adnan, 2007 incase of aspergillosis infected layer.

Fernandez *et al*., 2001 said that in broiler chickens, the liver was yellowish and slightly friable after 32 days of intoxication but not enlarged. Smith and Hamilton, 1970 described an increase of liver weight during aflatoxicosis in broilers. Huff *et al.*, 1986 found intoxication, liver atrophy, reflecting an inhibition of liver maturation in the early stages of aflatoxicosis and later hepatomegaly in broilers. A reduction of liver size intoxicated by aflatoxin had been stated by Harvey *et al*., 1991. Eliana N. C. Tessari *et al*., 2010 described broilers receiving the highest levels of aflatoxin B1 causes bile duct proliferation and trabecular disorder in liver. As like as the findings of different authors in the present study, post mortem findings were also recorded such as whitish/yellowish “sagu” nodules at lungs, air sac, pericardium, heart and other different organs; congested lung; enlarged spleen; cyst at liver; fragile heart and also ascites in the *Aspergillus* infected broilers.

Different biochemical parameters of *Aspergillus* infected broilers had been changed during the experiment which was very important for diagnosis of aspergillosis and supported the articles of many authors likely Rosa *et al*.; 2001; Oguz *et al*., 2000a; Hagiwara *et al.,* 1990; Kaneko, 1989; Bruguere-Picoux *et al.*; 1987; Ray *et al.,* 1986; Bortell *et al.,* 1983 and Malkinson *et al.,* 1982. The changes was not found in case of lower dose of infection but it became more significant after giving the dose higher which supported other articles of Raju and Devegowda 2000; Kubena *et al*., 1998; Abdel hamid *et al*., 1994; Jindal *et al*., 1994; Johri *et al*., 1990.

Tarkan and Adnan, 2007; Oguz *et al*., 2000a Kubena *et al*., 1998; Eliana N. C. Tessari *et al*., 2010 evaluated the decrease level of total protein (TP) in *Aspergillus* infected birds in their study. But the present study did not find any significant variation of TP in infected broilers all along the study period. Though the TP in experimental broilers was not varied significantly on all the different phases, but the level of albumin was significantly increased after the infection exposure at different treated groups respectively comparing to control group. It was also observed that, highly significant deviation was exposed at the post treatment period of this study where a significant distinction on the control group and highly significant variation on garlic group as well during infection exposure, treatment and post treatment period. But this result is totally conflicting to the observations of Oguz *et al*., 2000a; Raju and Devegowda, 2000; Kubena *et al*., 1998, Jindal *et al*., 1994.

The enzyme activities of the broilers had significantly altered. The AST level increased in all treated group after *Aspergillus* infection where the change of AST level was significant in case of Onion group but it was highly significant in Neem group. Similar observation was assessed by different authors namely Adeyemo and Sani, 2013; Fernandez *et al*., 2007; Santurio *et al*., 1999; Amer *et al*., 1998; Kubena *et al*., 1998; Jindal *et al* 1994; Balachandran and Ramarkrisnan, 1988; Eliana N. C. Tessari *et al*., 2010 in case of AST but not for ALT. Those researchers stated level of ALT also increased after *Aspergillus* infection but the present experiment did not found any significant change in ALT level of infected broilers.

Oguz *et al*., 2000a; Kececi *et al*., 1998; Kubena *et al*., 1998 found decrease level of uric acid in their study but there was no significant change in creatinine level. The creatinine level was remaining normal along the study period.

There was no any significant changes observed in carbohydrate, HDL and LDL level in case of *Aspergillosis* infected broilers. But in the treated group of neem, glucose level was reduced gradually and varied significantly. On other hand, the level of LDL (mg/dl) was quite opposite to the level of HDL. While HDL level was increased after the treatment intervention, LDL level was decreased on that period though the variation was not significant. Conversely, on the period of infection exposure LDL level was insignificantly higher than other two observational phases of this study. Moreover, on garlic group, LDL level was significantly varied compared to other treated and control group.

Raju and Devegowda, 2000; Oguz *et al*., 2000a; Kubena *et al*., 1998; Jindal *et al*., 1994 said that the total cholesterol level decrease due to aspergillosis. But the present study did not find any significant change in the infected broilers which coincided to the findings of Manning *et al*., 1990a,b; Huff *et al*., 1986; Tung *et al*., 1972. Moreover, the change occurred in the control group which was significant.

In intoxicated broilers, no variations in serum cholesterol, triglycerides level were found by Manning *et al*., 1990a,b; Huff *et al*., 1986; Tung *et al*., 1972. But in the present study the TG level gradually increased after the infection and it was significant in case of garlic group which was opposed to the study of Tarkan and Adnan, 2007.