Immunostimulatory and Growth Promoting Effects of Levamisole, a Potential Anthelminitic Drug: A Review

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Abstract
Levamisole, a broad spectrum anthelminthic is an already proven and promising immunomodulating agent which is reported to improve the phagocytic and bactericidal activities in patients suffering from polymorphism in surgical jaundice. The present article is constructed to review and discuss on the immunogenic potential of levamisole in vaccinated broiler chicks with effect on serum protein profile like serum total protein, albumen, globulin concentrations, albumen : globulin (A:G) ratio and body weight gain respectively.

Key words: Immunity, Levamisole, Chicks

Introduction
Livestock and poultry population are affected by many infectious diseases which cause immunosuppression in them. This immunosuppression leads to defeating the aim of controlling these diseases by vaccination. In spite of timely vaccination by established methods, failure and break down of immunity has become common. To overcome these immunosuppressive conditions, a modulation of microenvironment of the immune system seems to be essential. This can be achieved by immunomodulators or immunostimulating compounds. Renoux and Renoux\textsuperscript{1} discovered the immunomodulatory effect of Levamisole. Levamisole imposes its effect on the humoral immune response against infections vaccine in broiler chicks.

Documentation through researches and establishment of the concept
Prasad \textit{et al.}\textsuperscript{2} documented more promising HI titer in levamisole treated group than the control group suggesting its immunostimulating effect on humoral immune response. This finding was correlated with that of Krishnamohan\textsuperscript{3} and Kumar\textsuperscript{4}. Treatment with levamisole registers an increase in the mean total serum protein, serum albumen and serum globulin concentrations, as similar to the observations of Verma \textit{et al.}\textsuperscript{5}, Karnataka \textit{et al.}\textsuperscript{6} and Kujur\textsuperscript{7}. On the other hand, Prasad \textit{et al.}\textsuperscript{2} found A:G ratio to be higher in the control group rather than in the treated groups. This finding was similar to the reports of Vyas \textit{et al.}\textsuperscript{8} and Karnataka \textit{et al.}\textsuperscript{6}. The higher body weight gain in levamisole treated group than the control group in the present study was supported by the reports of Panda and Rao\textsuperscript{9} and Kumar\textsuperscript{4}.

Conclusion
To conclude it can be commented that treatment of the broiler chicks with levamisole increases the mean total protein concentration in the serum with an increase in average body weight gain.

References


