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Review Article

COW URINE DISTILLATE IS REGARDED AS PROMISING IMMUNOMODULATORY SUPPLEMENT FOR BROILER DIET: A REVIEW

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ABSTRACT

Cow urine therapy and all traditional practices from Indian systems of medicine have a strong scientific base. Traditional systems in medicines, whether from Ayurveda or Siddha or the use of cow urine distillate as immunomodulator are based on classical texts and systems, practices and products handed down over generations going back to Charak, Sushrutha, Vagabhatta, the Ashtangahridaya and the Samhitas. Cow urine has been described in 'Sushrita Samhita' and 'Ashtanga Sangraha' to be the most effective substance/secretion of animal origin with innumerable therapeutic values. In Ayurveda cow urine is suggested for improving general health. The present article highlights and portrays the immunopotential effect of CUD and CUD can be recommended in broiler ration at optimum dose level against NDV.

Keywords: Ayurveda, Broiler, CUD, Immunomodulator, Therapeutic

INTRODUCTION

Experimentally, it has also been proved that among urine from various species the urine of the Indian cows is most effective[1] for its medicinal properties. Immunomodulation is gaining importance for immunopotentiation in hosts against various infections[2]. The cow urine distillate (CUD) is found to have immunomodulatory effect in mice as it enhances both T-and B-cell proliferation and also increases the level of IgG[3]. Recently, the cow urine has also been granted U.S. patents (No. 6896907 & 6410059) for its synergistic properties with antibiotics, antifungal and anti-cancer drugs as bio-enhancer. It has provided the base for further research on immunomodulatory properties of indigenous cow urine. It has also been reported that CUD enhances B and T lymphocyte blastogenesis, increases IgG antibody titer in avian species[4,5]. Keeping in view all the above facts, the present investigation was planned to study the immunomodulatory effect of cow urine distillate on humoral and cell mediated immune response against NDV vaccination in broiler chicks when administered orally.

Discussion of research related facts and findings

Immunomodulatory effect of cow urine or its distillate has been reported by many workers[6-8] and therefore this has made the base for present research. The dose of CUD selected in the present study is according to the recommendation by Kumar et al.[4].

Jojo et al.[9] documented that the levamisole treated group of chicks also showed significant effect on MHI antibody titer in comparison to CUD suggesting its superior immunopotentiating effect over CUD on humoral immune response upon vaccination.

Awadhiya et al.[10], Srikumar et al.[11], Kumari[12] and Rakhi[13] showed increased cell mediated immune (CMI) response correlated with the findings. The findings were also in accordance with those of Chauhan et al.[3,14], Ambwani[7] and Garg et al.[5] who worked on lymphocytes blastogenic activity with respective mitogens using lymphocyte proliferation assay.

Summarized compilation of research reports and analyses of researches in India and abroad with scientific comments

Combining cow urine distillate (the term 'distillate' itself is a misnomer, since the material used is the residue, not the distillate) with antibiotics is not recommended at all and its combination in liquid or lyophilized powder form with modern drugs is irrational, since the relative bioavailability and pharmacokinetics of the components remain unknown. In vitro experiments with cow urine distillate have little relevance, since activity in vivo largely depends on plasma

levels, which in turn are related to serum binding properties and absorption[6]. Mammalian urine contains useful constituents like adrenocorticotropic hormaone (ACTH) isolated from pregnant female urine. Other constituents include various enzymes, amino acids and Erythropoetin. The reported results of experiments which have been carried out on cow urine distillate in India and the grant of the U.S. patent vindicates the use of cow urine as a bio-enhancer[15]. According to a recent online report of 'Love4Cow Trust', researchers at Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow have identified a fraction of cow urine distillate as bio-enhancer of commonly used antibiotics and anti-cancer drugs. Bio-enhancers do not possess drug activity of their own but promote and augment the bioactivity or bioavailability or the uptake of drugs in combination therapy. Such bio-enhancers have been earlier isolated only from plant sources. In the study at CIMAP, Lucknow, researchers found that 'cow urine distillate fraction' enhances the activity of antibiotics such as rifampicin by about 5-7 folds against *E. coli* and 3-11 folds against Gram-positive bacteria. Rifampicin is a front-line anti-tubercular drug used against tuberculosis. Interestingly, it was also found that 'cow urine distillate fraction' enhanced the potency of 'Taxol' (paclitaxel) against MCF-7 a human breast cancer cell line in in-vitro assays (US Patent No.6,410,059).

CONCLUSION

Cow urine distillate (CUD) possesses immunomodulatory effect as judged by increase in HI antibody titer against NDV. The immunopotentiating effect of CUD has been analysed on humoral and cell mediated immune response with NDV virus vaccination, its use as an immunomodulating agent at proper dose level may be advocated.

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