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A study on the effect of herbal medicine Oregano as an antibacterial and antifungal agent on respiratory diseases in breeder chickens after oral administration

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In recent years, bacterial and fungal diseases are common problems in many chicken breeder farms. This natural herbal medicine, Oregano, has antibacterial and antifungal activities, so it is necessary to note that these therapeutic effects have been approved in most valid pharmacopeias. Active ingredients of this herb have synergistic effects and can intensify the therapeutic of each others. The scientific name is Thymus vulgaris and classified in family Labiateae. It contained phenolic compounds with high anti–bacterial and anti-fungal effects in breeder chickens. The most important of them are thymol, carvacrol, paracymol, cineol and essential oil. It can prevent and treatment bacterial and fungal diseases and also it has probiotic effects. Previous studies have shown that mechanism of action for anti-bacterial and anti-fungal effects are related to their effect on cell membrane. Experimental tests showed that 0.1 solution of oregano reduced the growth of the following pathogens as 95-99.5%: 1- Candida albicans 2- Pseudomonas aeruginosa 3- Salmonella typhimurium 4- Staphylococcus aureus 5- Streptococcus faecalis. In this herb, the mechanism of action is to change the permeability of pathogen cell membrane for potassium. This herbal medicine can be used for prevention of growing bacteria and fungi in poultry feed and it can be used for treating bacterial and fungal diseases. Experimental tests show that oregano as a solution in drinking water reduces symptoms of infectious coryza disease in poultry and affects on Ornitobacterium Rhinotracheal bacterial disease (ORT) in breeder chickens as well. The results show that rate of mortality reduced and gain of weight is better than controls. This herbal medicine should be used in the beginning of symptoms of infectious diseases and its dosage depends on the age of flock. It has been recommended to dissolve one liter of pure form of oregano in one thousand liters of water.

Keywords: Thymus Vulgaris, Herbal medicine Oregano, Antibacterial, Antifungal, Breeder chickens

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Study of simvastatin therapeutic effect on renal function amelioration after complete unilateral ureteral obstruction in rat

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Background & Objective: The protective effects of statins have been largely explored in several organs. These drugs have been tested in several models of progressive renal disease. The aim of this study was to investigate simvastatin therapeutic effect in renal function amelioration after complete unilateral ureteral obstruction (UUO) in rat. **Material & Methods:** Adult male SD rats were divided into four groups (10 in each group): control (C), sham-operated (S), UUO and treated (UUO+SIM) groups. In UUO+SIM group simvastatin (2mg/kg) orally administrated twice daily for 14 days. In day 3, 7 and 14 after UUO blood sample were collected from tail vein and total cholesterol (TC), blood urea nitrogen (BUN) and serum creatinine (SCR) were measured. Rats were sacrificed on 14th day after surgical operation and kidney were harvested for evaluation of interstitial renal fibrosis and glomerulosclerosis. **Results:** Biochemical finding showed that in UUO group TC, BUN and SCR levels were significantly increased ($p<0.05$) compared with C and S groups but not significant changes between C and S groups. In UUO+SIM group, simvastatin was significantly decreased ($p<0.05$) TC, BUN and SCR levels compared with UUO group. Histopathological findings showed that complete unilateral ureteral obstruction induced interstitial renal fibrosis and glomerulosclerosis in UUO group but simvastatin significantly decreased ($p<0.05$) interstitial renal fibrosis and glomerulosclerosis. **Conclusions:** Our results showed that simvastatin attenuated interstitial renal fibrosis and glomerulosclerosis probably via tubular activation and decreasing inflammatory process.

Keywords: Simvastatin, UUO, BUN, Cholesterol, Creatinine, Renal fibrosis, Glomerulosclerosis, Rat