AVIAN KIDNEYS UNDER PRESSURE AND RENAL BIOMARKERS OF METABOLIC IMBALANCE IN BROILER CHICKEN FARMS

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Abstract

Avian renal pathophysiology reflects the homeostatic status of the organism and underlies the development of the most frequent renal disorders in birds (hyperuricaemia, visceral and articular gout, acute and chronic renal failure).These conditions may arise in association with the progressive depletion of renal functional reserve. The monitoring of certain serum indicators, such as uric acid for purine imbalance, glucose for carbohydrate imbalance, total cholesterol and triglycerides for lipid imbalance, serum sodium and potassium for fluid and electrolytic imbalance, and serum calcium together with the calcium-to-phosphorus ratio for mineral imbalance, is useful for the early detection of homeostatic disturbances in broiler chickens (Ross 308). The present review synthesises the morphofunctional particularities of the avian kidney, the pathophysiological mechanisms involved in the onset of metabolic dysfunction and their relevance to clinical diagnosis in poultry farming practice. The early identification of nephropathies enables the introduction of phytotherapeutic interventions (Silybum marianum, Aloe vera, Curcuma longa, Moringa oleifera, Rosa canina) with nephroprotective and homeostasis-regulating effects. This perspective shifts the emphasis from the treatment of established renal pathology towards its early recognition and prevention, consequently transforming routine biochemical monitoring into an effective tool for optimising health and productivity on poultry farms. As metabolic dynamics are an inherent feature of physiological adaptation, early diagnosis followed by appropriate nutritional and water-management interventions becomes essential, thereby redefining avian renal prophylaxis as an active component of veterinary sanitary management in modern poultry farming.

Key words: *renal pathologies, broiler chickens, serum indicators*