COMPARATIVE STUDIES ON SERUM BIOCHEMICAL PROFILING AT VARIOUS STAGES OF REPRODUCTION IN MURRAH BUFFALOES

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Abstract: A comparative study on serum biochemical constituents was carried out in pregnant, estrus, anestrus and regular cyclic Murrah buffaloes. A total of 24 healthy Murrah buffaloes, aged about 3-6 years, were selected and they were divided into four groups, each comprising of six animals (Group-I: pregnant; Group-II: estrus; Group-III: anestrus and Group-IV: regular cyclic). Animals were properly vaccinated and dewormed. In early morning before feeding the animals, blood samples were collected in heparinized vacutainer and immediately transported to the laboratory. The blood samples were centrifuged at 3000 rpm for 15 min. Serum samples were separated and kept at -20°C until further use. Biochemical assays were carried out for glucose, total protein, albumin, urea, creatinine, total cholesterol, alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), calcium and phosphorous. These parameters were investigated with Span Diagnostic kits as per the standard biochemical procedures. The serum biochemical values of regular cyclic and the estrus animals were almost similar in all the parameters. Among the four groups, the serum biochemical values were higher in pregnant group and the anestrus group had lowest values.

Key words: Murrah buffaloes, Serum biochemistry,

INTRODUCTION

Buffalo is a major genetic resource, contributing in a big way towards agricultural GDP. Animal healthiness can be defined as the absence of disease determined by clinical examinations shared with various diagnostic tests. Serum biochemical and haematological reference values are used to ascertain normality and to diagnose disease and physiological alteration. Text book reference intervals produced by European or United States veterinary laboratories [1] are often based on animals living under good husbandry conditions in temperate climates, and the reference sample groups may differ from those of the developing countries. Potential differences may be credited to genetic factors, the quality and quantity of nutrition, presence or absence of water, electrolyte losses in sweat, internal parasites and climatic conditions. This makes it complicated to depend on reference intervals from other countries to infer results for animals living in a tropical country like India. Hence, an establishment of reference values for the desi buffaloes in our own climate becomes mandatory.