



Follicular fluid protein profile in buffalo

SHINY JOY, B.T. DESHMUKH¹, S.D. DHAWARE¹ AND S.D. BORKAR¹

Members of the Research Forum

Associate Author :

¹Department of Veterinary
Biochemistry, Nagpur Veterinary
College, Maharashtra Animal and
Fishery Sciences University,
NAGPUR (M.S.) INDIA

Abstract : The present study was planned to investigate and compare the protein profile *viz.* total proteins, albumin, globulin, albumin/globulin ratio, uric acid, urea and creatinine in follicular fluid and serum in buffaloes. The electrophoretic pattern of proteins in follicular fluid of different sizes of ovarian follicles and serum were also studied. Buffalo ovaries, at random stage of oestrous cycle and with unknown reproductive status were obtained from Deonar Abattoir, Chembur, Mumbai, during their e-visceration. Pairs of ovary from each buffalo were collected in separate sterile plastic bags. They were carried to the laboratory in thermos flask containing ice packs. In the laboratory, the ovaries were cut open at the hylus using a pair of sterile scissors. These were washed with tap water, distilled water and finally with deionised water. The follicles visible on its surface were classified based on their diameter as small (<5 mm), medium (5-10 mm) and large (>10 mm) follicles using digital vernier caliper. The fluids from these follicles were aspirated using 26 gauge-2 ml syringe. Twenty four samples each from small, medium and large sized follicles along with blood samples of buffaloes belonging to respective category were collected. Besides, blood samples from 12 buffaloes during mid-oestrous cycle from a private farm (Imom Son's Dairy Farm, Thane-400 604) were collected. Blood samples were allowed to clot at room temperature. Clear serum was separated by centrifugation at 1500 rpm for 30 min. The ovarian follicular fluid samples were centrifuged at 2000 rpm for 15 minutes in order to remove the cell debris. The follicular fluid and the blood samples were analysed for total proteins, albumin, globulin, albumin/globulin ratio, urea, creatinine and uric acid using STAT FAX 2000 Autoanalyser and kits. A random sample from the three classes of follicles each and a serum sample were used for protein fractionation by sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS-PAGE). The results of the present study indicated that the protein components in the follicular fluid and serum exhibited increase / decrease in accordance with follicle size. The electrophoretic pattern of follicular fluid and serum showed significant difference between two fluid compartments. The small reservoir of fluid of follicles reflects the biochemical activity of the follicle. It is, therefore, suggested to carry out further studies to elucidate the precise role of these biochemical components and separated proteins which will help in understanding of the basic changes ongoing during follicular development, so that the optimal environment could be established for the maturation of viable oocytes.

Key words : Follicular fluid, Serum, Protein, Creatinine, Urea, Uric acid, SDS PAGE

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AUTHOR FOR CORRESPONDENCE :

SHINY JOY

Department of Veterinary
Biochemistry, Nagpur Veterinary
College, Maharashtra Animal and
Fishery Sciences University,
NAGPUR (M.S.) INDIA