VI. SUMMARY

In the present study the physical, chemical and microscopic properties of pregnant and non-pregnant Deoni cow urine were analyzed. An attempt also had been made to assess the pharmacological activities of pregnant and non-pregnant cow urine viz., analgesic, anti-inflammatory, anti-pyretic, wound healing, hepatoprotective and antidiabetic activities in laboratory animals. Safety evaluation was also carried by using sub-acute and sub-chronic oral toxicity studies in rats.

The average pH of pregnant Deoni cow urine was 8.2 to 8.45 and that of non-pregnant urine was 8.20-8.47. The average specific gravity was 1.020 to 1.030 in both pregnant and non-pregnant cows’ urine. In pregnant cow urine 7 proteins were found with molecular weights of 67.11, 61.40, 58.86, 37.01, 25.45, 17.68 and 11.06 KDa and in non-pregnant cow urine 3 proteins were found with molecular weights of 67.57, 62.27 and 55.04 KDa.

Pregnant and non-pregnant cow urine were administered orally at the doses of 0.25 ml/kg and 0.5 ml/kg in all the studies and compared with control and reference groups.

Cow urine was evaluated for analgesic, anti-pyretic and anti-inflammatory activities by comparing with distilled water-treated control group and aspirin administered reference group. Cow urine-treated animals did not show significant results when compared to the control group animals.

Wound healing study was conducted through excision wound model in rats and cow urine was applied topically. It was compared with distilled water (control) and povidone iodine (reference) application. Cow urine-treated wounds revealed a good healing activity by showing less wound area, less healing time when compared to control groups. There was a significant increase in tensile strength, tissue protein and hydroxyproline content in cow urine applied wounds when compared to distilled water (P<0.001) and povidone iodine (P<0.05) applied wounds.

Cow urine was also assessed for the antidiabetic activity by comparing with normal animals, diabetic animals (control) and glibenclamide treated animals. Diabetes was induced by intraperitonal
administration of streptozotocin 45 mg/kg i.p. Cow urine treated animals did not show significant decrease in blood glucose, serum cholesterol, TGs, BUN or serum creatinine when compared to control groups.

When cow urine was evaluated for hepatoprotectant activity, significant results were found. Hepatotoxicity was induced by intraperitoneal administration of 50 % carbon tetra chloride (CCl₄) in olive oil at 1.0 ml/kg of body weight. Cow urine treated animals were compared with normal animals, hepatotoxic animals (control) and silymarin treated animals. In this study, cow urine treated animals showed a significant (P<0.01) decrease in serum enzymes like AST, ALT, ALP and LDH when compared to control group. There was a significant (P<0.05) increase in TSP and a significant (P<0.01) decrease was noticed in serum bilirubin and hepatic MDA levels when compared to control animals.

Safety evaluation was carried out in Wistar albino rats. Both pregnant and non-pregnant cow urine was administered orally at the doses of 0.25 and 0.5 ml/kg which was compared with distilled water treated animals. The doses were administered daily for 28 days in sub-acute study and for 90 days in sub-chronic study. In both the studies there were no significant alterations found in the body weight, hematological (Hb, PCV, TEC, MCV, MCH, MCHC and DLC), biochemical parameters (serum ALT, AST, BUN and creatinine), gross and histopathological observations when compared to the control group.

Thus, it was concluded from the present study that cow urine has the wound healing and hepatoprotectant properties at the given doses. It is not unfair to predict that the cow urine is safe to consume at the given doses based on the hematological, biochemical and histological findings.

Further research is needed in this field to identify the active principles of cow urine responsible for the hepatoprotectant and wound healing ability.