TITLE PAGE

HISTOPATHOLOGICAL EFFECTS OF ALCOHOL [ETHANOL] ON THE LIVER, KIDNEY AND UTERUS OF PREGNANT FEMALE ALBINO WISTAR RATS

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ABSTRACT

This forty-five day study was undertaken to evaluate the effects of alcohol (ethanol) in pregnancy using female Wistar rats. Twenty-eight (28) adult rats (twenty virgin female rats and eight males) aged two – three months weighing between 150 – 265g were used for this work. The rats were divided into five groups (A, B, C, D and E) of six rats each except group E which had four rats. 100 percent (Absolute) ethanol procured from sigma Aldrich was diluted and constituted to 20 percent and graded doses of 0.3g/kg, 0.8g/kg and 2g/kg body weight were administered to the test groups (A, B and C) of rats respectively for thirty days orally using oral cannula. The fourth group (group D) served as the pregnant control while the fifth group (Group E) served as the non pregnant control and received water only. Within the period of study, three rats in cage A, two rats in cage B and two rats, in cage C delivered. Their offspring/pups were weighed at birth and observed for overt physical abnormalities. At the end of the thirtieth day, Blood samples were collected by retro orbital puncture from the medial canthus of the rats the serum was separated from each blood sample and was analysed for some biochemical parameters using “QCA” (Quimica clinical aplicado) assay kits. Parameters assayed were serum Urea and Creatinine, Alkaline phosphatase (ALP), Alanine transaminase (ALT), and Aspartate transaminase. All female rats were sacrificed on the thirtieth day and the liver, kidney and Uterus were dissected out for Histology studies. The results showed a statistical significant dose dependent decrease in body weight gain of the rats in the treatment groups B and C [6.25 ± 1.25] and [-0.75 ±18.88] respectively when compared with the controls (D and E) [49.75 ±11.18] and [44.25 ±1.11] respectively. A reduction in litter size and birth weight was observed after delivery. The rats treated with 0.3g/kg, showed a statistical increase in ALT, AST and ALP levels when compared with the controls (P<0.05). Higher doses of 0.8g/kg/day and 2g/kg/day did not produce any obvious change in these parameters. Serum Creatinine and Urea levels show no differences when compared with the control. Histopathological findings on the liver include cellular infiltration of inflammatory cells and necrotic cells. The kidney of the treated rats revealed tubular degeneration with inflammatory cellular infiltration. Also the uterine tissue showed mild epithelial changes, presence of polymorphs and congested vessels. Alcohol consumption in pregnancy increases risk of tissue damage. Hence women should exercise caution on alcohol consumption in pregnancy.