

**Conflicts of interest**

The authors have none to declare.

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**Hepatotoxicity of valproate on fetal mice liver**

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**Aims and objectives:** Valproic acid is an antiepileptic drug. It acts by elevating GABA level in the CNS. It exerts therapeutic effects in a broad range of seizure (tonic-clonic, myoclonic, absence, partial) and bipolar disorder.

**Material and methods:** The present work was carried out in the Department of Anatomy, IMS, BHU, Varanasi to evaluate the cytotoxic effect of valproate on fetal mice liver. Pregnant mice were exposed to single dose (8th gestational day) and multiple dose (7th, 8th, 9th gestational day) of sodium valproate (200 mg/kg dose) intraperitoneally and fetuses were collected on 18th gestational day.

**Results:** The liver was smaller in size in valproate treated groups. Histologically, liver showed dilated central vein, breakage of endothelial lining of central vein, edema and extracellular matrix deposition around central vein. In the multiple treated groups, the liver cell nuclei were visible but cell outline was lost. Some of cells showing perinuclear condensation suggesting programmed cell death.

**Conclusion:** Valproate was found teratogenic at 200 mg/kg dose in mice fetus.

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**Development of spleen in intrauterine life**

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**Aims and objectives:** The present study is an attempt to find out variations in morphometry of fetal spleen at different gestational ages (14th–40th weeks).

**Material and methods:** Study was conducted on 24 fetus (14 male, 10 female) preserved in formalin. Fetuses were procured from Dr Sushila Tiwari Hospital, Haldwani, with permission from ethical committee. They were arranged in 3 groups – 1 (12–34 weeks); 2 (25–36 weeks) and 3 (>36 weeks). Parameters of spleen like length, breadth, thickness were measured by digital vernier calipers and weight was recorded by weighing scale. Results were documented and subjected to statistical analysis.

**Results:** The mean length (*L*), breadth (*B*), thickness (*T*), weight (*W*) of spleen in group 1 was 1.52 cm (*L*), 0.92 cm (*B*), 0.58 cm (*T*), 0.736 g (*W*). In group 2 was 2.80 cm (*L*), 1.94 cm (*B*), 1.04 cm (*T*), 3.557 g (*W*). In group 3 was 3.62 cm (*L*), 2.40 cm (*B*), 1.21 cm (*T*),

6.688 g (*W*). These parameters showed statistically significant correlation with increasing gestational age. The percentage ratio of spleen to fetal weight in group 1, 2, 3 was 0.147%, 0.258%, 0.285% respectively.

**Conclusion:** The present study showed an increasing trend in mean parameters of fetal spleen with increasing gestational age. Spleen belongs to reticuloendothelial system and performs both immunological and haematological functions. Splenic development is useful for determining its morphological study.

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**Morphological study of foetal kidney length in relation to gestational age**

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**Aims and objectives:** A true estimation of gestational age plays an important role in quality maternity care and scheduling the labour date. This study aimed to evaluate the normal fetal kidney length in relation to gestational age.

**Material and methods:** The study was done on 65 fetuses (male 36 and female 29) does not having any congenital anomalies were collected from Dr. Sushila Tiwari Memorial Hospital, Haldwani with due regards on ethical ground. After that all fetuses are preserved in 10% formalin. The measurements of both kidneys were taken from digital vernier caliper. Data were collected in three groups of gestational age G1 (10–20 weeks), G2 (20–30 weeks) and G3 (30–40 weeks).

**Results:** In all three groups the mean length of right kidney (cm) is 1.39, 2.37, and 3.73 while mean length of left kidney is 1.51, 2.53, and 3.83 respectively. The study established a significant and positive correlation ( $p < 0.000$ ) between the length of kidneys and gestational age. But there is no significant relation is found between kidney length in male and female fetuses. Maximum increase in kidney length was observed from group G2 to G3 (20–40 weeks).

**Conclusion:** The present data showed a normal range of fetal kidney length from early stages to full term of gestation. It may be useful in intrauterine assessment of development and early prenatal diagnosis of renal abnormalities.

**Conflicts of interest**

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**Variations of abdominal aorta and its branches in fetuses of Manipur**

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**Aims and objectives:** Abdominal aorta gives different branches to supply oxygenated blood to all the important organs in the abdominal cavity. Variations of abdominal aorta and its