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|  | **MICROSCOPICAL STUDIES ON THE POSSIBLE TOXIC EFFECT OF SODIUM BENZOATE ON THE LIVER OF PREGNANT MICE AND THEIR FETUSES** |
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| **Abstract** |
| The present study delt with the possible effects of sodium benzoate (SB), which is commonly used in Egypt as an antimicrobial agent in food industry, on the livers of pregnant mice and their fetuses. The pregnant females were treated with low and high doses of SB (200 & 500mg/kg b.wt) through stomach tube. In this study, 25 pregnant mice were used, which were classified as follow: 5 pregnant mice were used as control, 10 animals in group 1 and in group 2 treated with low and high doses of SB, respectively, during days 8-12 or 12-16 of pregnancy. On day 18 of gestation, the liver of the treated mothers showed some histopathological changes which were more severe in mice given the high dose than those given the low dose. These alterations included highly vacuolated hepatocytes, dilated blood sinusoids, congestion of blood vessels, hypertrophied Kupffer cells and focal necrotic areas. Structureless hepatocytes were also observed with vacuolated, pyknotic and chromatolytic nuclei. On the other hand, the fetal liver maternally treated with SB revealed similar degenerative changes such as degenerated hepatocytes, dilated sinusoids and blood vessels, and large spaces occluded with red blood cells representing severe haemorrhage. The hematopoietec cells showed variable occurrence in the fetal hepatic tissue, probably, due to SB treatment. Ultrastructural alterations were also reported in the liver cells. These changes included large vacuoles of different sizes and forms, lipid droplets and highly degenerated mitochondria with deformed outer and inner mitochondrial membranes. Also, activated Kupffer cells were observed in blood sinusoids with dense elongated nuclei. All these degenerative changes could be related to the direct action of SB on the pregnant mothers and through the placental passage of SB or its metabolites on the developing fetuses. |
| **Keywords** |
| [antimicrobial agent](https://ejz.journals.ekb.eg/?_action=article&kw=955&_kw=antimicrobial+agent); [sodium benzoate](https://ejz.journals.ekb.eg/?_action=article&kw=25473&_kw=sodium+benzoate); [Pregnant mice](https://ejz.journals.ekb.eg/?_action=article&kw=42389&_kw=Pregnant+mice); [Mice fetuses](https://ejz.journals.ekb.eg/?_action=article&kw=27217&_kw=Mice+fetuses); [Microscopic structures](https://ejz.journals.ekb.eg/?_action=article&kw=41612&_kw=Microscopic+structures) |