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Research Details :

Research Title : تأثير التلوث البيئي بوقود السيارات (أبخرة الغازولين) على التركيب النسيجي والكيمنوسيجي (للممرات التنفسية و أنسجة الرئة في الوبر (خنزير غينيا

تأثير التلوث البيئي بوقود السيارات (أبخرة الغازولين) على التركيب النسيجي والكيمنوسيجي (للممرات التنفسية و أنسجة الرئة في الوبر (خنزير غينيا

Descriptipn : The aim of the present study was to investigate the effect of gasoline (car fuel) inhalation on airways (trachea and lung) in guinea pig. 80 animals were used in the present study. They were divided into four groups : control group I of animals inhaled air for 24 hours for 30 , 60 , 90 day , control group II normal control group in the lab , experimental group III inhaled gasoline in the station for 24 hours for 30 , 60 , 90 day and experimental group IV inhaled (1L of gasoline with 1456 of compressed air) in the lab for 6 hours / day , 5 days / week for 30 , 60 , 90 days . Experimental groups were divided into two groups : group received simultaneous administration of ascorbic acid (vitamin C 10 mg / kg) and exposed to gasoline for 30 day , and group included animals exposed to gasoline for 60 day and were left for recovery in room air for 60 day . Result : behavioral changes were noticed in experiment group in comparison to control group , no significant difference in body weight between the three groups , lung weight was increased in animals exposed for 90 day and a gross observation of the lung revealed multifocal collapse and hemorrhage in both lungs . Histopathological changes by using light microscope examination of the trachea revealed infiltration of inflammatory cells, increased mucus secretion, focal disruption and desquamation ciliated epithelium and reduced number of goblet cells were observed. By using scanning electron microscope examination of the trachea revealed focal disruption and decudation of ciliated epithelial cells, disorientation and shortening of cilia. The histopathological changes by using light microscope examination of the lung revealed focal collapse , infiltration of inflammatory cells , hemorrhage , blood congestion , focal emphysema , lymphoid aggregates , focal edema , fibrosis , enhanced proliferation of bronchus associated lymphoid tissue (BALT) , sloughing of epithelial cells , increased mucus secretion and elongation of epithelial folds lining the bronchus and bronchiolar tissue . However; supplement with vitamin C at time of exposure to gasoline and animals left for recovery in room air showed decrease of these histopathological changes, the trachea and lung appeared almost similar to the control group. Conclusion, on the basis of these results we suggest that gasoline exposure causes pulmonary injury. This injury can be decrease by using vitamin C supplement or by stopping gasoline exposure.