

in embryonic cells were examined. **ABSTRACT** Pregnant rats treated with a

teratogenic dosage of cannabis resin (4.2mg/kg) daily for the first

A review was given of the literature dealing with the aetiology of chromosomal abnormalities and the association between these and teratogenesis. The relevance of cytogenetic investigation of the effects of cannabis resin, hypoglycin-A and fulvine was elaborated in the light of their known biological effects. Background information on the botanical aspects and on the use of the plants containing these substances was furnished.

The effect of these 3 substances on rat and human chromosomes was observed using cultured leucocytes, and rat fibroblasts, treated in vitro. Over a wide range of doses (20-300 micrograms per ml) no effects on the chromosomes were detected with the administration of cannabis resin and fulvine. Hypoglycin-A was effective in producing a highly significant number of abnormalities in rats while in humans there was a significant number of gaps and breaks at high concentrations of 100 and 200 micrograms per ml., these were the only concentrations administered.

Chromosomes were examined in leucocytes of rat following in vivo administration of cannabis and fulvine at concentrations known to induce teratogenic effects and veno-occlusive disease respectively. In addition, chromosomes were examined in leucocytes of 3 patients (siblings) with veno-occlusive disease after exposure to fulvine in ingested extracts of Crotalaria fulva. Cannabis again produced no abnormalities while a significant number of damaged cells was observed with fulvine and C. fulva exposure. There were gaps, breaks, quadriradials and a dicentric chromosome in the patients. Chromosomes

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6 days of pregnancy. These also produced no detectable abnormalities. 7

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