Abstract


Effects of methylphenidate (Ritalin) on mammalian myocardial ultrastructure.
Henderson TA¹, Fischer VW.

Author information

Abstract
Previous observations have indicated lamellated ultrastructural lesions in the myocardium of a patient treated with methylphenidate (Ritalin) hydrochloride (MPH). A causal relationship between MPH exposure and these membranous changes was tested in the myocardium of rats and mice. Following injection of varying doses of MPH for different periods, myocardial ultrastructure was examined and lesions were quantified by stereological techniques. Myocardial tissue also was stained using techniques selective for acid phosphatase and for sarcoplasmic reticulum to identify possible pathogenetic mechanisms. MPH induced membrane accumulations and lamellations which were not membrane-bound and did not react for acid phosphatase, but stained positively for sarcoplasmic reticulum. Both lesions were highly focal, surrounded by normal appearing myocardial tissue. Lamellations were evident at the earliest timepoints examined and appeared to occur without lysosomal involvement. Lesions were still apparent 12 weeks after terminating MPH. These data suggest that MPH may have persistent, cumulative effects on the myocardium.

PMID: 8838158 [PubMed - indexed for MEDLINE]

MeSH Terms, Substances

LinkOut - more resources