Effect of clarithromycin(claribiotic)on hepatoytes of adult albino rat6s (histological and electron microscope study)

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Antimicrobial agents constitutes a rapidly expanding group of drugs that are useful for treatment of various types of infections such asrespiratory tract infection and in surgical operations.This work was performed to study the biochemical effects ofclaribiotic as a recent macrolide antibiotic (l998) on the liver of sixtyadult male albino rats which were divided into four groups as follows.Group 1 : Thirty rats were used as controls and each one wasgiven acetic acid 0.1% solution orally every 12 hours as the drug notdissolved in water but only in 0.1% acetic acid solution.Group II: Ten rats each one was given claribiotic 7.5mglkg bodyweight / 12h for one week.Group III. Ten rats, each one was given claribiotic 7.5mglkgbody weight / 12h for two weeks.Group IV: Ten rats, each one was given claribiotic 7.5mglkgbody weight/l2h for three weeks.Liver specimens we~e taken immediately after sacrificing of theanimal by suden knock on the head, two specimens were taken from eachrat one for electron microscopic examination and the second wasprocessed through paraffin technique for light microscopic examination.Assesment of liver functions was achieved through biochemical analysisof serum carrying out (serum glutamic oxaloacetic transaminase) SGOTand (serum glutamic pyruvic transaminase) SGPT the result obtained canbe summarized as follows.Histological picture after Hx & E and Masson’s trichrome stains:Group I (Control group) : showed classical hepatic lobule whichwas composed of a central vein and mass of liver cells, portal tract whichwas found at angle of hepatic lobule, minimal connective tissue aroundcentral vein and portal area.Group II : Showed mild vacuolation of cytoplasm ofhepatocytes,mild dilatation of blood sinusoids with minimal cellular infiltration atportal tract and mild change in amount or distribution of connectivetissue.Groups ill: Showed more vacuolation in the cytoplasm of livercells, also there were dilatation and engorgment affecting central vein,blood sinusoids and portal vein. Mononuclear cellular infiltration andfibrous tissue streaks in central regions and between hepatocytes wereobserved.Group IV: Had marked vacuolation in the cytoplasm of livercells, there were more dilation and congestion affecting central vein,blood sinusoid and portal vein. Marked mononuclear infiltration andfibrous tissue streaks in portal tract and between hepatocytes wereobserved.Electron microscopic Picture:Group I: examination of liver sections of control rats showed athepatocytes had abundant cytoplasm packed with organelles, their nucleiwere oval or rounded and the mitochondria were rounded with

doublemembranes.Group II: showed mild change in mitochonderia in the form ofpleomorphism, proliferation of some endoplasmic reticulum and normalnucleus.Group ill and IV: some nuclei of hepatocytes showedcondensation of their chromatin in the form of small clumps, somehepatocytes showed small areas of degenerated cytoplasm and increasein number of mitochondria with mild pleomorphism with interupted outermembrane, proliferation and dilation of some rough endoplasmicreticulcum cistemea, multiple lipid DROPlets, glycogen particles wereapparent and lysosomes were also proliferated. The blood sinusoidsshowed hypertrophy of the lining endothelial and Kupffer cells, some ofthe blood sinusoids were dilated congested and filled with inflammatorycells and some of blood sinusoids were surrounded by collagen fibers.Biochemical Changes:Biochemical changes showed mild increase in SGOT and SGPTenzymes and marked increase in their level in Group III and IV withincrease intake of drug in the body.The results of this work attract our attention to restrict the use ofclaribiotic for short duration and urgent indication and it must never beused in liver dysfunction.