中文題目：**P-糖蛋白及藥物阻抗蛋白在老化心肌組織的表現**

英文題目：**ROLE OF P-GLYCOPROTEINS AND MULTIDRUG RESISTANCE-RELATED PROTEINS IN CARDIAC TISSUE DURING AGING PROCESS**

作　　者：焦錫孝 李信堂 謝從閤 房同經

服務單位：國軍松山總醫院內科部

國立陽明大學醫學院藥理學系

國防醫學院生物及解剖藥科

仁美診所

前言：. P-glycoprotein (P-gp) and multidrug resistance related-proteins (MRP) are membranes of the ATP binding cassette (ABC) superfamily of transporters: these proteins are located on the cellular membrane and actively pump a wide range of substrates out of the cell. The rat genes mdr1a and mdrlb code for p-glycoproteins, while mrp1 and mrp2 genes code for MRP1 and MRP2 proteins, respectively. In addition, P-gp and MRP may play an important role in keep cell survival and preventing cell apoptosis during stressing and aging process. In particular, their location in the heart suggests a secretory function and a role in detoxification processes and in protecting myocardium from toxic substances and stress. These evidence strike us to investigate P-gp and MRP changes in aged heart.

材料及結果：For this project, Sprague-Dawley rats were used. Afterwards, rats were perfused and fixed under routine procedure. Whole heart were dissected out and sectioned by microtome. In this study, the modulation of the level of transcript for these genes during rat aging and stressing process in the heart was analyzed by reverse transcription-polymerase chain reaction. An decreasing level of transcript during aging was demonstrated for mdr1a and mdr1b in aged (20 months old) heart considered. In contract, mrp1 transcript did not show any modulation. The maxium level of expression was reached in adult rates at postnatal week 10 and a significant decrease was demonstrated in aged rats. Western blot analysis with monoclonal antibodies confirmed this different pattern of expression during aging in the heart. In addition, heat-shock increased mdr1a and mdr1b transcript, present in all ages, but the increase was partially inhibited by aging.

結論：These results demonstrate that aging and heat-shock process regulates P-gp and MRP transcript, and that aging can decrease, the expression P-gp via inhibition of the heat-indurced activation of mdr1a and mdr1b transcript. However, other factors may also participate in P-gp and MRP induction by aging or stressing process.