

INFLUENCE OF THE ANAESTHETICS IN THE TRANSPORT AND BINDING TO BLOOD COMPONENTS OF RENAL RADIOPHARMACEUTICALS.

SETSUKO SATO ACHANDO, ELENA S. HAMADA, RÔDZA DA SILVA V. GONÇALVES, OLGA GONÇALVES DE CARVALHO, EMIKO MURAMOTO.

COMISSÃO NACIONAL DE ENERGIA NUCLEAR/SP

P.O. BOX 11049-05499-PINHHEIROS-SÃO PAULO/BRAZIL

INTRODUCTION: The interference of anaesthetics in the transport and binding plasmatic protein of renal radiopharmaceutical ^{99m}Tc -DMSA (^{99m}Tc -2,3 dimercaptosuccinic acid); ^{99m}Tc -DTPA (^{99m}Tc -dihydratriaminopentaacetic acid); ^{131}I -Hippuran (^{131}I -ortho-hippuric acid) was studied.

METHODS AND RESULTS: The rats were sacrificed in 1,5,15,30,45 and 60 minutes by decapitation and the blood samples were collected in heparinized glass vials. The binding to plasmatic proteins were obtained by the precipitation method with TCA 10%. For the radiopharmaceuticals studied the results were similar for urethane and ethylic ether. The affinity of the binding of ^{99m}Tc -DTPA to red cells in relation to the total blood activity in 60 minutes was $0,43\% \pm 0,04$ to $4,22\% \pm 0,40$ for urethane and $0,96\% \pm 0,20$ to $3,76\% \pm 0,78$ for ethylic ether. When ^{99m}Tc -DMSA and ^{131}I -Hippuran were used, no variation in the results was observed. In the partition between red cells and albumin serum 12%, we could see that the affinity of ^{99m}Tc -DMSA presents a great variation, being greater with ethylic ether in 15 minutes. The transference was not appreciable after 45 and 60 minutes, the partition of ^{99m}Tc -DTPA and ^{131}I -Hippuran became stable at the same time interval. However in the case of ^{99m}Tc -DTPA with ether, the affinity observed was significantly lower.

REFERENCES:

1. CARLSEN, J.E.; MOLLER, M.L.; LUND, J.Q. Comparison of four commercial Tc- 99m preparation used for the measurement glomerular filtration rate: Concise *J.N.Med.* 21: 126-129, 1980.
2. McAfee, J.G.; GAGNE, G.; ATKINS, H.L.; P.T.; REBA, R.C. et al. Biological distribution and excretion of DTPA labelled with In-111. *J.N.Med.* 20: 1273-1278, 1979.
3. MURAMOTO, E.; ACHANDO, S.S.; ARAÚJO, E. S.S.; GONÇALVES, R.V.; PEREIRA DE, N. VA, C.P.G. Influência do anestésico líco e uretana) sobre alguns radiofármacos. Public. IPEN nº 287, janeiro de 1980.
4. RUSSELL, Ch.; D.; ROWELL, K. SCOTT, J.W. control of technetium- 99m -DTPA: corre analytical tests with in vivo protein binding in man. *J.N.Med.* 27: 560-562, 1986.