"7TH SYMPOSIUM ON LIQUID VENTILATION AND MEDICAL APPLICATIONS OF PERFLUOROCARBONS"

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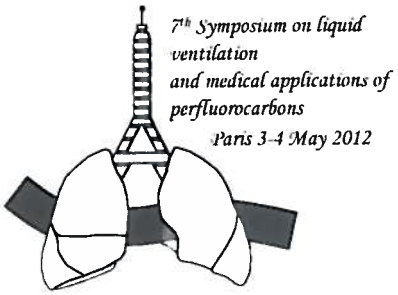

ABSTRACT NUMBER: PFC_010

Biodistribution and toxicology of two PFCs intravenously injected in rats.

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Several experimental studies have showed that PFC, being chemically and biologically inert, are minimal absorbed and do not cause long-term adverse toxic effects. Since during total liquid ventilation PFC leakage is a rare but possible event and lung traumatic damage cannot be excluded, the evaluation of maximal tolerated PFC blood concentration and organ PFC toxicity gain a clinical relevance. In the present study we evaluated the biodistribution of two different PFCs (FC770 and PFOB) in rats. PFC administration in bolus caused animals sudden death independently from injection volumes. FC770 and PFOB have been therefore administered intravenously by Alzet pump (0.25µl/hour) for 48 hours (total administrated amount: FC770=21,5mg; PFOB=23,2 mg). PFCs biodistribution was determined in blood, lung, brain, adipose tissue, liver, kidney by gas chromatography. The same organs have been collected for histopathological evaluation. Haematological indices and liver and kidney functionality were also evaluated.
FC770 and PFOB show the same pattern of distribution in different organs. Lungs were the organ in which greatest concentration of compounds was found, followed by blood and adipose tissue. In all other organs the concentrations of FC770 and PFOB were minimal.
In some rats, oedema and hemorrhagic areas in lungs were observed and this occurrence was more frequent with FC770. In general, the extension of pathological changes are limited and drastically reduced respect to that observed in preliminary experiment in which 430,32mg and 463,2mg total amount of FC770 and PFOB respectively have been administered. Haematological indices and liver and kidney functionality were normal.