

The parameter that influences the water proton spin lattice relaxation time (T1) from organ to organ in an individual species is not well understood. Water content of the tissue has been ascribed as the common denominator with pro and con arguments. Akber (1,2) recently showed that the common denominator of T1 variation from organ to organ in an individual species seems to be the organ weight.

In this work, T1 values of humans, rats, and pigs will be assessed with organ weight. Results indicate that T1 decreases as organ weight increases. It appears that T1 is different in different species because of the organ weight, which in turn dictates the metabolic rate in an individual species. It is obvious that the overall metabolism can not be independent of organ weight and neither is the relaxation mechanism.

References:

Akber SF. NMR relaxation data of water proton in normal tissues. *PCP and Med NMR* 28:205, 1996

Akber SF. Organ weight: a new tissue parameter to assess water proton spin lattice relaxation time.

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