Summary

ARAÚJO, D **Contribution of magnetic resonance volumetry of mesial and neocortical temporal structures in the surgical treatment of temporal lobe epilepsy.** 2003. 113 p. PhD thesis. Medical School of Ribeirão Preto, São Paulo University, Ribeirão Preto.

Temporal lobe epilepsy is the most commom form of focal epilepsy. Mesial temporal scleros is the usual etiology.
Magnetic resonance volumetry may be a useful research tool, and also may be used to lateralize hipocampal changes in surgical candidates, according to several reports.
We performed temporal lobe volumetry in 69 consecutive patients of the Epilepsy Surgery Center of the Hospital of Ribeirão Preto School of Medicine of the University of São Paulo. We measured temporal pole, posterior segment of the temporal lobe, amygdala, hippocampus, and parahippocampal gyrus.
The volumes were compared to clinical and neurophysiologic variables, as an attempt to find variables that could predict surgical outcome. We also sought correlations between structural (volume), and functional (epileptogenesis and clinical features) changes.
Our data suggest that the hippocampus has a very important role in temporal lobe epilepsy. The question as to wether this role is primary or secundary to changes in other structures remains to be solved. In all of our cases, the hippocampal volume was altered, either as absolute or relative volume, or as asymmetry index.
The only variable that correlated with postsurgical outcome was the hippocampal asymmetry index, being greater in the group with best postsurgical evolution.
The most involved neocortical structure was the temporal pole. There was a correlation between temporal pole and amygdala volume loss and duration of epilepsy. This suggests a progressive damage, added to the initial precipitating injury (IPI).
There was also significant difference between mesial structures contralateral to the surgery side and those of the controls. These data shows more widespread and bilateral damage, even in patients with unilateral epilepsy by EEG and clinical criteria.

Keywords: Temporal lobe epilepsy; MRI volumetry; Surgical Treatment.