IN VITRO POTENTIAL STUDY AS ANTICHOLINESTERASE ADJUVANT TEAS ON CANINE COGNITIVE DYSFUNCTION TREATMENT

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INTRODUCTION
Within the increase on dogs life expectancy, several degenerative neurological disorders have showed up. Among these ones, a similar disease to Alzheimer’s disease (AD) in human beings could highlight the Canine Cognitive Dysfunction (CCD). Canine Cognitive Dysfunction can be regarded as a multifactorial disease, since various changes have occurred in their patients, as well as, several factors seem to be related to it. Among these changes, there is a reduction in acetylcholine neurotransmitter concentration. Thus, many studies have been performed in regarding to acetylcholinesterase (AChE) inhibitors molecules, the enzyme responsible for acetylcholine degradation in order to assist these neurodegenerative diseases treatments. Based on the literature data showing certain components from some plants could inhibit this enzyme, this study aimed comparing in vitro four teas effect on acetylcholinesterase activity on homogenized canine brain.

OBJECTIVE
This study aimed analyzing in vitro anticholinesterase effects of boldo, apple, green and mint teas toward brain canine AChE.

MATERIAL AND METHODS
A necropsied canine brain was crushed, homogenized, frozen and stored for further use. Protein concentrations by Peterson methodology (1977) and AChE assays by Ellman (1961) were determined. All teas were prepared on 1g/50 mL water ratio.

RESULTS AND CONCLUSION
Mint tea was the only one which did not significantly inhibit the AChE activity (Student t test, α= 0.05). Green tea was more effective than the other one, inhibiting the activity up to 92.67%, to be used 300 μL, against 54.33% Boldo inhibition and 37.33% apple. According to these results, it might be concluded that green, apple and boldo teas have able components for inhibiting acetylcholinesterase activity. The isolation of such components and the determination of their AChE individual effects might provide major improvements on the natural compounds employment as adjuvant teas for treating CCD.

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