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Chromogranin A in Human Saliva as Putative Biomarker of Alzheimer's Type Dementia

S. Alagendran[1,2], S. Velayutha Prabhu[1,3], N. Pushpa[4], Mohanadoss Ponraj[5], M. Rajasekaran[6], G. Fernandez-Saavedra[7], G. Archunan[1]

Department of Animal Science, School of Life Sciences, Bharathdasan University, Trichy, Tamil Nadu, India[1]
Department of Biochemistry, Dhanalakshmi Srinivasan Agriculture College, Perambalur, Tamil Nadu, India[2]
Department of Biotechnology, Bharathiyar University, Coimbatore, Tamil Nadu, India[3]
PG & Research Department of Microbiology, Cauvery College for Women (Autonomous), Tiruchirappalli, Tamilnadu[4]
Department of Biological Sciences, School of Mathematics and Natural Sciences
The Copperbelt University, Kitwe, Zambia[5]
Department of Neurology, KAPV Medical College, TN MGR Medical University, Trichy, Tamil Nadu, India[6]
Department of Pharmacology, Faculty of Medicine, UNAM, Mexico D.F[7]
Corresponding Author: goldking1977@gmail.com[5] garchu56@yahoo.co.in[1]

Abstract: *Early diagnosis of Alzheimer's disease will be helpful as no clinical method is available to determine the role of mild cognitive impairment. Chromogranins are soluble glycophosphoproteins which activate microglial cells leading to neurotoxic phenotype. There is need for biomarkers through non-invasive approach to identify incipient Alzheimer's disease patients with mild cognitive impairment. Chromogranin A present in saliva samples was determined using ELISA. The immunoreactive patterns of Salivary CgA were assayed in dementia and compared to those observed in Alzheimer's disease. Salivary CgA level in Alzheimer's disease patients was 6.54 pmol/ml and 0.23 pmol/ml in control group. Plasma CgA in dementia patients was 85.76 ng/ml and 60.34 ng/ml in control. Statistical analysis showed significant difference level of $P \leq 0.05$. This study showed that salivary CgA levels were reduced at early stages of AD. Chromogranin A (CgA) in saliva exhibited significant reduction in immunoreactivity and to be selectively associated with prion protein deposits, CgA was only found in Amyloid beta plaques. This shows influence of constitutive amyloid protein on chromogranin secretion and role of CgA in AD neurodegenerative process. This study shows that biochemical and psychosocial stress can play major role in CgA and acts as potential biomarker for the diagnosis of AD type dementia.*

Keywords: Chromogranin A, Saliva, Alzheimer's disease, Dementia

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