EARLY APPEARENCE AND DISTRIBUTION OF LIPOFUSCIN PIGMENT IN BRAIN CELLS OF *CATLA CATLA*

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ABSTRACT

Aging is a process of becoming older and loss of adaptation. Aging is loss of viability and increase in vulnerability. Obvious manifestation of aging includes wrinkling of skin, slowness of movement and inability of the eyes to accommodate for near version. Another manifestation of aging is the wide spread accumulation of pigment within the cytoplasm of cells of many organs particularly in neurons, skeletal, myocardial, spleen, corpus leuteum gonad, liver and nerve cells. To examine the histochemical nature and early observation of lipofuscin pigment in brain cells of premature age of *Catla catla*, tissue samples of brain cells of pre mature age group, Paraffin section were cut at 6 µ and stained with Nile blue A, ferric ferricyanide, the stained sections were examined under light microscope. In pre mature age level pigment accumulation in brain cells of *Catla catla* Nile blue A reacted moderately and mildly affinities with Carbol fuchsin.

Table: 2 Fig:02 References:07

KEY WORDS: Lipofuscin, Histochemical Nature, *Catla catla*, Brain,Nile blue A,Carbol fuchsin

INTRODUCTION

It is think over that aging is a physiological mechanism of an organism's is to be grow older. Aging is described as a diminution or loss of adaptivity with growing age. Aging is caused by a time-progressive diminution of Hamilton's forces of natural selection. Many decline factor as well as mitochondrial dysfunction, shortening of telomere, DNA damage free radicals etc. affects aging. Aging can be described as a unchanging halt of the cell attached to stereotyped phenotypic modifications. Hayflick suggested this method in human fibroblasts serially passaged in culture (Hayflick and Moorhead, 1961). Deposition of lipofuscin pigment is a process of aging. The process of lipofuscin accumulation is thought to occur continuously throughout the life of all organisms. Lipofuscin accumulation is related to increasing age and its accumulation is very high. In pre mature age there is no accumulation of pigment. These are mainly proteins (30%-70%) and lipids (20%50%) that are apparently resistant to lysosomal recycling. In aged

tissues deposition of lipofuscin pigment showed as yellow brown pigment. .Lipofuscin deposits are frequently seen in the brains of older animals and humans and are one of the few available cytological manifestation of the aging process. The granules size and shape showed variation. They are limited by a membrane and their content is, for the most part, very dense and coarsely granular, but homogeneous spherical bodies with little natural density are often present.

MATERIAL AND METHOD

The material used in this study brain cells from premature age group. Tissues samples at age group of premature. Brain tissues were fixed in bouin's fluid and paraffin section cut at 6 u thickness. Histochemical studies were made in sections stained with Nile blue A and ferric ferricyanide.

RESULT AND DISCUSSION

Result indicated that the lipofuscin pigment granules were not observed in the early premature age with any stains. The first appearance of the lipofuscin pigment late pre mature age. Histochemical nature in brain cells showed characteristically different staining behaviour. Brain cells easily stained with Nile blue A, strongly positive to the ferric ferricyainde. Similarly these stains were used in [6] & [4] results revealed that in the first age group pigment accumulation in the brain cells of fish. Similarly it was reported that there was no accumulation of pigment in early age of life in housefly upto 7 days, Dysdercus [5] Lipofuscin was not observed in heart at pre mature. *Channa punctatus* [1]. In the present study the first appearance of lipofuscin pigment in brain cells in after pre mature age the conclusion of the present study are in agreement with those of 5, in the neurons of young animals 2 observed first observation in lipofuscin in nervous system at the age of 5 month in Dog & 6 month in Hog, [7], that lipofuscin pigment in heart of Dysdercus similarly these stains were used in [5].

CHARACTERISTICS OF LIPOFUSCIN PIGMENT GRANULES IN THE BRAIN CELLS OF FIRST AGE GROUP.

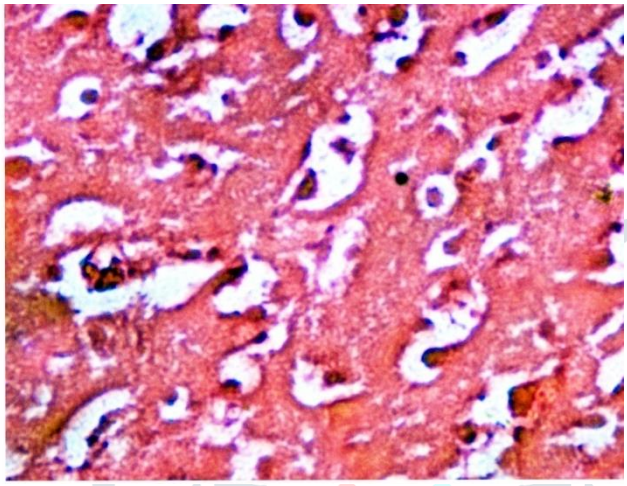
Age group	Tissues	Morphological characteristics of lipofuscin pigment	Distribution of lipofuscin pigment
1	Brain	Heterogeneous and irregular	Irregularly scattered throughout the cytoplasm

HISTOCHEMICAL NATURE OF LIPOFUSCIN PIGMENT IN DIFFERENT TISSUES IN FIRST AGE GROUP

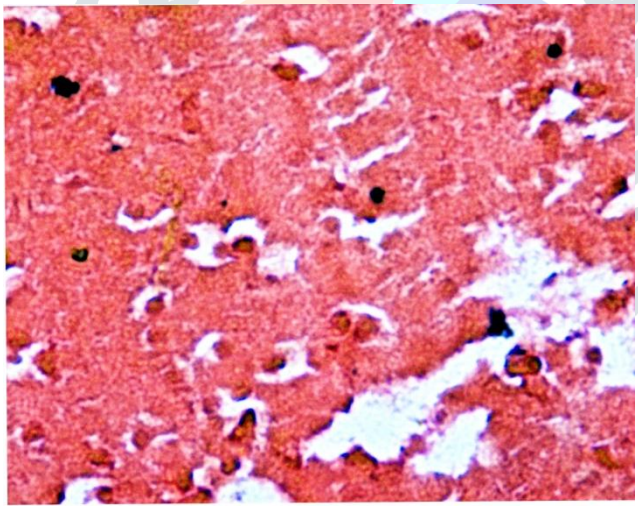
Age group	Tissues	Stains	
		Nile blue A	Carbol fuchsin

PRE-MATURE	**Brain**	**++**	**+**

+++ Strongly positive, ++moderately positive,+Mildly positive



FIRST OBSERVATION OF LIPOFUSCIN PIGMENT OF BRAIN CELLS OF PRE-MATURE AGE NILE BLUE A STAINS*300



FIRST OBSERVATION OF THE LIPOFUSCIN PIGMENT OF BRAIN CELLS OF PRE- MATURE AGE CARBOL FUCHSIN STAINS*300

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