



LEUKOENCEPHALOPATHIES

SHARANYA RAMAKRISHNAN

NEUROLOGY ROTATION

WHAT IS LEUKOENCEPHALOPATHY?

- LEUKOENCEPHALOPATHY (LE) IS A STRUCTURAL ALTERATION OF THE CEREBRAL WHITE MATTER IN WHICH MYELIN SUFFERS THE MOST DAMAGE

V/S

- LEURKOARAIOSIS

DECREASED VASCULAR DENSITY, ESPECIALLY IN DEEP WHITE MATTER IN THE BRAIN, ON MRI OR CT CAUSED BY DEMYELINATION, GLIOSIS, OR DECREASED PERFUSION

- LEUKODYSTROPHY

TERM FOR A GROUP OF WHITE MATTER DISEASES, SOME FAMILIAL, CHARACTERIZED BY PROGRESSIVE CEREBRAL DETERIORATION USUALLY IN EARLY LIFE, AND PATHOLOGICALLY BY PRIMARY ABSENCE OR DEGENERATION OF THE MYELIN OF THE CENTRAL AND PERIPHERAL NERVOUS SYSTEMS

- LEUKOMALACIA

COAGULATION/ NECROSIS OF WHITE MATTER ESPECIALLY IN PREMATURE NEONATES.



CLASSIFICATION OF LEUKOENCEPHALOPATHY

- BASED ON OCCURRENCE:
 1. ACUTE: MRI CHANGES OCCUR WITHIN 7 DAYS OF INSULT
 2. CHRONIC: CHANGES OCCUR >3WEEKS AFTER THE INSULT
- BASED ON ETIOLOGY
- BASED ON MRI FINDINGS

ETIOLOGY LEUKOENCEPHALOPATHIES

IES

VASCULAR

- Posterior reversible leukoencephalopathy syndrome PRES
- Cerebral Autosomal Dominant Arteriopathy with Sub-cortical Infarcts and Leukoencephalopathy (CADASIL)
- Cerebral autosomal recessive arteriopathy with subcortical infarcts and leukoencephalopathy (CARASIL)
- Moya moya disease
- Primary CNS angiitis
- Small vessel disease

INFECTIOUS

- Viral encephalitis (JC Virus, HIV, Cache valley virus, HSV)
- Neurosyphilis
- Subacute sclerosing panencephalitis SSPE
- Encephalitis (fungal)
- Chronic post viral meningoencephalitis

INFLAMMATORY

- Hashimoto encephalopathy
- Acute disseminated encephalomyelitis ADEM
- Multiple sclerosis
- non-paraneoplastic encephalitis
- Rasmussen encephalitis
- CLIPPERS
- Neurosarcoidosis

PARANEOPLASTIC /NEOPLASTIC

- Paraneoplastic encephalitis
- Neoplastic-
- Primary CNS lymphoma
- Glioblastoma
- Gliomatosis cerebri

TOXIC

- Heroin related Acute leukoencephalopathy “chasing the dragon”
- Organic-Solvent Related Acute Leukoencephalopathy
- NO
- Methotrexate
- CO
- Methanol

METABOLIC

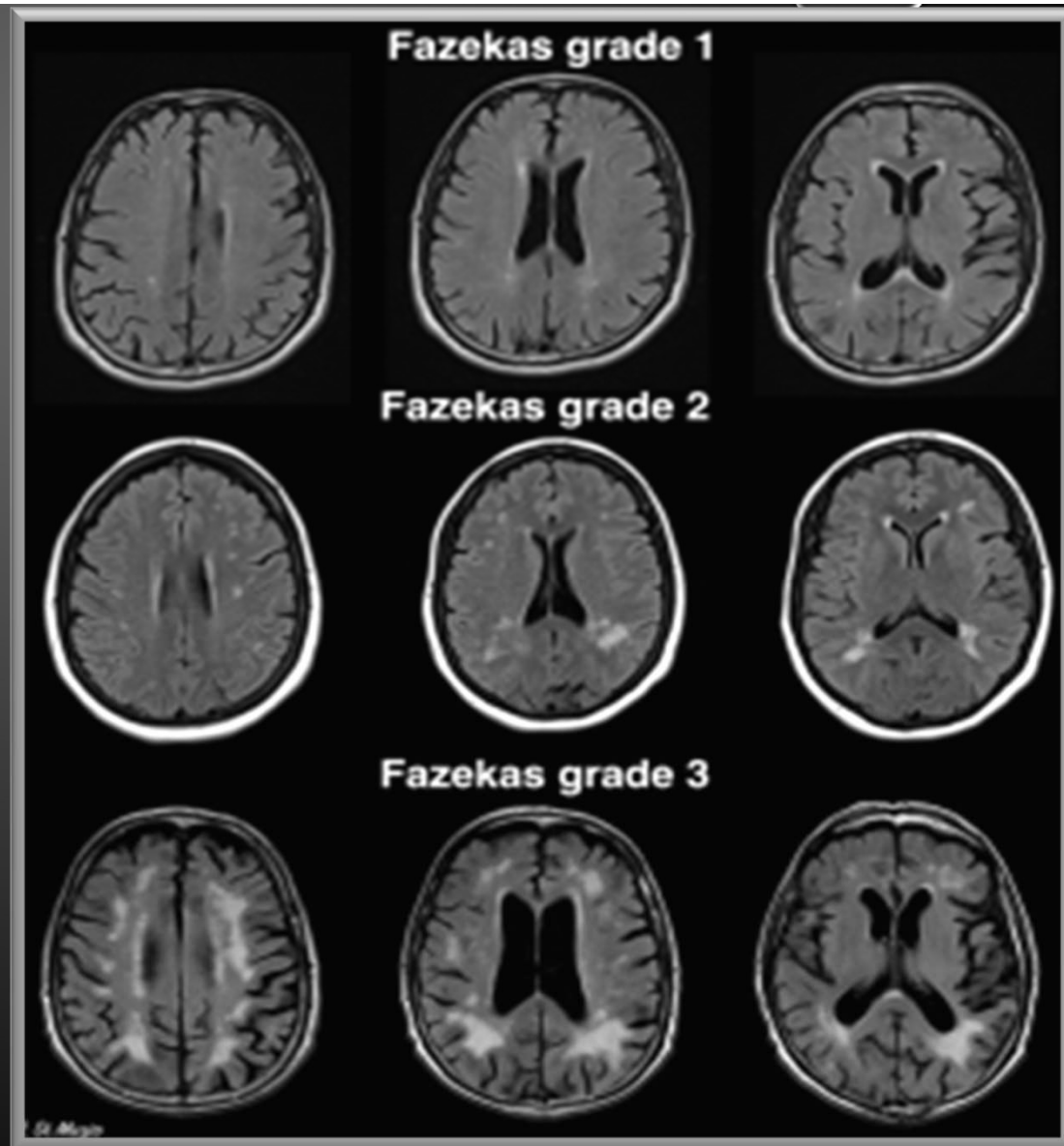
- Mitochondrial disorders
- Leukodystrophies
- EPM
- CPM

GRADING

GRADING:

(LEUKOARAIOSIS)

- FAZEKAS GRADE I, MILD: FEW SMALL PUNCTATE LESIONS IN THE WHITE MATTER.
- FAZEKAS GRADE II, MODERATE: LARGER WHITE MATTER LESIONS THAT ARE BEGINNING TO BECOME CONFLUENT.
- FAZEKAS GRADE III, SEVERE: CONFLUENT T2 HYPER INTENSITY.





TREATMENT

- FOCUSES ON ADEQUATELY MANAGING THE UNDERLYING CAUSE.

PROGNOSIS

- IT IS POSTULATED THAT THE PROGNOSIS OF ACUTE WHITE MATTER LESIONS IS BETTER THAN GREY MATTER LESIONS. IN THE ABSENCE OF CYSTIC HEMORRHAGIC PICTURE, ACUTE LEUKOENCEPHALOPATHY CAN BE REVERSIBLE, IF MANAGED EFFECTIVELY.
- HOWEVER, CHRONIC LEUKOENCEPHALOPATHY IS A RESULT OF A GRADUAL PROLONGED INSULT TO THE CNS WHITE MATTER AND THE DEFICITS ARE RATHER PERMANENT.

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