
ABSTRACTS

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Vigabatrin versus ACTH in the Treatment of Infantile Spasms. *Shahnaz Ibrahim, Shamshad Gulab, Sidra Ishaque, Taimur Saleem. Department of pediatric and child health, Aga Khan University Medical College*

Introduction: Infantile spasm is one of the most serious epileptic syndromes in the early infantile age. ACTH and Vigabatrin are two actively investigated drugs in its treatment. This study compares the efficacy of ACTH vs Vigabatrin monotherapy and combination therapy in the treatment of Infantile spasms. Methodology: We carried out a retrospective file review of 49 patients with infantile spasms who presented to AKUH from 2006 to 2008. Inclusion criteria were clinical symptoms of infantile spasms, hypsarrhythmia on EEG and at least one year of follow up. Type of drug distribution was random according to the availability, cost and ease of administration. Results: 49 cases were selected for the review. 57% were males. Mean age at onset of seizures was 3.5 months. 71% were identified as symptomatic and 45% of these were due to birth asphyxia .46.% received Vigabatrin monotherapy while 12% received ACTH monotherapy. The remaining 42% received Vigabatrin followed by ACTH or vice versa due to partial response. 50% achieved complete cessation of spasm with Vigabatrin and 43 % achieved complete cessation with ACTH. 15% patients on ACTH while 45% patients on Vigabatrin monotherapy experienced relapse. 50% patients on ACTH, 39% patients on Vigabatrin, and 25% patients on combination therapy were in remission at the time of last follow-up. The associations between the type of therapy received and subsequent remission or relapse were not significant ($p=0.212$ and 0.299 respectively). Conclusion: No significant difference in outcomes was observed between the two drugs. Larger studies are required to validate these therapeutic trends.

Lahore Neurosciences Club: One year audit - Success and Challenges. *M Athar Javed, Neurology Department, King Edward medical University, Lahore.*

Lahore Neurosciences Club (LNC) was founded under auspices of Pakistan society of Neurology (PSN) in January 2008. The objectives of club were to have a joint forum for different specialties of neurosciences especially neurology, neurosurgery, neuroradiology and psychiatry and discuss difficult and interesting / rare cases on a single platform. This will provide opportunity for unanimous decisions in difficult cases including diagnostic and therapeutic approaches. This will also provide opportunity for postgraduate to learn from discussions of their seniors in respective fields. This will also provide a forum to develop and strengthen social ties amongst colleagues from different disciplines. Finally overall benefit will go not only to ailing and needy humanity suffering from different

disorders requiring multidisciplinary approach but also training of postgraduates doctors and a way for continuous medical education (CME) for all participants. Initially meeting has been scheduled bimonthly. So far five meeting has been conducted and 6th meeting is scheduled for February 2009 which will be last of first year of LNSC. The meeting has been well attended by different specialties of neurosciences especially neurology, neurosurgery, neuroradiology and psychiatry from different governmental and private hospitals from Lahore, Gujranwala and Faisalabad. Many cases were discussed including common diseases with rare presentation or requiring special diagnostic or therapeutic decisions and rare syndrome. Cooperation regarding participation from different disciplines has been excellent; tolerance to accepts views, criticism and comments has been credible. Twenty two cases have been discussed in five meeting. A brief review of different and interesting cases will be discussed. Overall performance of Lahore Neurosciences Club (LNC) during the past one year has been excellent and met the objectives for this platform. Still we need to expand this forum and try to arrange monthly meeting with issuance of CME hours and certificates for all participants. We should also start joint research projects from this forum, celebrate days and publish brochures for awareness of common diseases related with different disciplines. This will help identify problems at an early stage and prevent morbidities and disabilities resulting from delayed diagnosis.

Language Induced Seizures: Is it epilepsy or not? *Muhammad Nasrullah, M. Athar Javed. Department of Neurology, King Edward Medical University / Mayo Hospital, Lahore.*

A case of 14 yrs old right handed boy with history of myoclonic jerking of body especially right upper limb and head, only on talking is presented with video clips of seizures and audiovisual recording of EEG. The seizures were not related with reading or any other precipitating factors. There was no LOC. There was no family history of epilepsy. The language induced seizures are yet not classified by ILAE as a distinct entity. Apparently the seizure seems focal but on EEG there was generalized seizure activity. The mechanism and localization of seizure activity remains questionable.

Classification and clinical features of headache disorders in Pakistan: a retrospective review of clinical data. *Muhammed Murtaza¹, Mehreen Khatun¹, Haroon Daniel², Aziz B. Sonawalla³ ¹Medical College, Aga Khan University Hospital, Karachi, Pakistan, ²Department of Nursing, Aga Khan University Hospital, Karachi, Pakistan, ³Department of Medicine, Neurology Section, Aga Khan University Hospital, Karachi, Pakistan*

Background: Morbidity associated with primary headache disorders is a major public health problem with an overall prevalence of 46%. Tension-type headache (TTH) and migraine are the two most prevalent causes. However, headache has not been sufficiently studied as a cause of morbidity in the developing world. Literature on prevalence and classification of these disorders in South Asia is scarce. The aim of this study is to describe the classification and clinical features of headache patients who seek medical advice in Pakistan. Methods: 255 consecutive patients who presented to a headache clinic at a tertiary care hospital were enrolled in this study. A questionnaire was filled during each consultation that recorded demographic details, onset and lifetime duration of illness, pattern of headache, associated features and family history. International Classification of Headache Disorders (ICHD) version 2 was applied. Chronic Daily Headache (CDH) was defined as greater than 14 episodes per month. Results: 66% of all patients were women and 81% of them were between 16 and 49 years of age. Migraine was the most common disorder (206 patients) followed by TTH (58 patients), medication-overuse headache (6 patients) and cluster headache (4 patients). CDH was seen in 99 patients. Patients with TTH suffered from more frequent episodes of headache than patients with migraine ($p < 0.001$). Duration of each headache episode was higher in women with menstrually related migraine (MRM; $p = 0.015$). Median age at presentation and at onset was lower in patients with migraine who reported a first-degree family history of the disease ($p = 0.003$ and $p < 0.001$ respectively). Conclusions/Significance: Patients who seek medical advice for headache in Pakistan are usually in their most productive ages. Migraine and TTH are the most common clinical presentations of headache. Onset of migraine is earlier in patients with first-degree family history. MRM affects women with more severe disease and warrants special therapeutic consideration. Follow-up studies to describe epidemiology and burden of headache are needed.

Epilepsy Surgery in a Developing Country - Initial Experience and Future Perspectives. *Muhammad Zubair Tahir, Syed Ather Enam. Department of Neurosurgery, Aga Khan University Hospital, Karachi, Pakistan.*

Introduction: Surgery is an established treatment for medically refractive epilepsy. However, it is still underutilized in developing world despite a greater disease burden of epilepsy in these countries. We have reviewed our experience in surgical treatment of epilepsy and evaluated the benefit of change in surgical philosophy to minimally invasive image guided surgery. Material and methods: We retrospectively reviewed our fifteen cases of

epilepsy surgery done over a period of eight years. Outcome is assessed on the basis of Engel's classification for seizure control. Results: Fifteen patients underwent surgery for intractable epilepsy. Out of them, functional hemispherotomy (HS) was done in 6, anterior temporal lobectomy (ATL) in 6 and neuro-navigation guided selective amygdalohippocampectomy (SAH) using keyhole technique in 3 patients. One patient developed hemiplegia and another died of acute post op cerebral oedema. Both of these patients had undergone functional HS. There was no morbidity or mortality in ATL and SAH groups. The average duration of follow up was 4 months, 24 months and 48 months for SAH, ATL and HS respectively. Seizure control was assessed using Engel's classification. All patients in SAH group (100%) had Grade 1 control, while only 5 patients (83%) in ATL group and 4 patients (66%) in HS group had Grade 1 control. Conclusions: Our case series has demonstrated a successful model for the diagnosis and surgical treatment of medically intractable epilepsy in developing country. SAH, if indicated, showed less morbidity and better results when compared to other forms of epilepsy surgery.

Neurologic Outcome in Adult Onset Idiopathic Opsoclonus-Myoclonus Syndrome. *Emily Pharr, Scott Haines, Khurram H. Nawaz, Mustafa S. Siddiqui. Department of Neurology, Wake Forest University School of Medicine, Winston-Salem, North Carolina.*

Background: Opsoclonus-Myoclonus Syndrome (OMS) is a rare disorder. In adults, OMS is often attributable to underlying neoplasm but is just as commonly idiopathic. Previous reports suggest variable outcomes in idiopathic versus paraneoplastic OMS. Objective: To study the phenomenology and response to treatment of adult onset idiopathic OMS. Methods: Three consecutive cases of adult onset idiopathic OMS which presented at our institution over a 4 month period were included in the study. All patients were followed up for an average of 7 months. All three patients were video taped prior to treatment. Results: The patients were females with a mean age of 53 (range 27 to 78 years). All had an acute onset of visual disturbance, gait difficulty, and uncontrollable jerking. Both opsoclonus and myoclonus were present in all patients. Two of the patients experienced antecedent viral illnesses: one sinusitis and the other gastroenteritis. All had ataxia requiring the aid of assistive devices. An evaluation which included imaging, and paraneoplastic serology revealed no evidence for neoplasm. All patients received a combination of Intravenous Immunoglobulin (IVIg, 0.4 g/kg) and plasmapheresis (PMP). The first patient underwent PMP (7 treatments), followed by 5 doses of IVIg. At 9 month follow-up, she had mild residual opsoclonus, no myoclonus and a normal gait. The second

patient received 5 doses of IVIg and was readmitted one month later with persistent symptoms to undergo PMP (5 treatments). At 4 month follow-up, she was ambulating independently with mild residual opsoclonus. The third patient received 5 days of IVIg with improvement in vision and resolution of myoclonus. Five months later she experienced worsening vision and gait and was readmitted for PMP (5 treatments). At the time of discharge, she was walking independently and her blurred vision had resolved. No adverse side effects were noted with either IVIg or PMP. In these patients, opsoclonus, myoclonus and gait all improved with myoclonus and ataxia showing the greatest degree of improvement. Conclusions: IVIG and plasmapheresis are well tolerated and should be considered as a treatment for adult onset idiopathic OMS. In idiopathic OMS, gait dysfunction and myoclonus might be more likely to improve than opsoclonus. Further studies are indicated to elucidate whether this recovery is due to IVIg, plasmapheresis, or is simply the natural course of the disease.

Pencillamine induced optic neuropathy in patient with Wilson's disease. *Nadia Mehboob, Arsalan Ahmad. Division of Neurology, Shifa College of Medicine and Shifa International Hospitals, Islamabad.*

Introduction: Wilson's disease is a rare autosomal recessive genetic disorder of copper metabolism due to inherited deficiency of copper binding protein ceruloplasmin. Penicillamine is frequently prescribed to treat Wilson's disease and can rarely cause optic neuropathy. Case report: 37 year old right handed male presented in neurology clinic in April 2007 with 2 months history of generalized tiredness, slurred speech, slow walk and inability to stand without support. On examination abnormal neurological signs were bradykinesia, rigidity left arm, diffusely brisk reflexes and bilateral flexor plantars. Slit lamp examination showed KF rings. Laboratory examination showed low ceruloplasmin level and increased 24 hour urinary copper. MRI showed subtle decrease in width of pars compacta. He was diagnosed as a case of Wilson's disease and was started on Tablet Penicillamine 250 mg three times a day, Syrup Zinc sulphate (ZnSO₄) 50mg twice daily and Tab. Procyclidine 5mg PO TID. He improved over the next six months but then started complaining of blurred vision. Procyclidine dose was decreased but blurring of vision persisted. Visual evoked potentials (VEP) showed bilateral optic pathway dysfunction, so pencillamine dose was decreased, and then stopped for 4 weeks and ZnSO₄ dose was increased. On cessation of pencillamine his neurological symptoms got worse but his vision improved. Repeat VEP showed interval improvement compared to previous study. He has been advised Cap trientine 250 mg twice daily in addition to ZnSO₄. Conclusion: Pencillamine therapy is a rare

cause of optic neuropathy and it should be considered while treating patients of Wilson's disease.

Segmental myoclonus secondary to vitamin B12 deficiency- a potentially treatable entity. *Fatima Nazir, Ismail A Khatri, Arsalan Ahmad. Division of Neurology, Shifa College of Medicine and Shifa International Hospitals, Islamabad.*

Introduction: Reflex-sensitive spinal segmental myoclonus is an unusual entity, with myoclonus localized and restricted to an isolated spinal cord level. The myoclonus is enhanced by external stimuli, such as tendon percussion. We describe one patient with vitamin B12 deficiency who developed reflex-sensitive myoclonus. Case report: A 22 year old male presented with speech difficulty for 1 week, jerky movement in trunk on left side for past 3 days (as shown in video) and hiccups for 2 days. The course of his illness started from jerky movement of tongue then he developed speech difficulty which was followed by jerks in left side of body. On neurological examination patient was awake, alert and oriented. He had hiccups and jerks on left side of the body. Cranial nerve examination was normal. There was no focal motor weakness, plantars were bilateral flexor. MRI of the brain and dorsal spine was normal. EEG and NCS/EMG were unremarkable. All laboratory investigation, CBC, electrolytes, LFT's was normal except low level of vitamin B12 level (vB12). His symptoms improved with vB12 replacement and oral gabapentin. Conclusion: The relation of low serum vB12 level and myoclonus is speculative and very few studies are published. In this case report, vB12 deficiency has probably played role in the generation of spinal myoclonus.

Moyamoya disease - a rare cause of stroke in children. *Fatima Nazir¹, Ejaz A Khan², Arsalan Ahmad. ¹ Division of Neurology, ²Department of Pediatrics, Shifa College of Medicine and Shifa International Hospitals, Islamabad.*

Introduction: Moyamoya disease is a rare, progressive cerebrovascular disorder caused by stenosis and occlusion of arteries at the base of the brain. Only a few cases have been reported from Pakistan. We report two more cases of moyamoya disease presenting as recurrent strokes. Case 1: Six and a half year old boy, previously healthy, presented with history of low grade fever for 3 days and sudden onset of right hemiparesis. Abnormal neurological signs were right upper motor neuron facial palsy, marked right hemiparesis with an extensor plantar response. MRI showed low T1 and high T2 signals involving left frontoparietal regions and right anterior parietal region. CT-angiogram showed completely occluded bilateral internal carotid artery and features of

moyamoya diseases. He was put on low dose aspirin and rehabilitation. Case 2: Six year old boy with history of head trauma presented with high grade fever and sudden onset weakness on right side of body for one month. He had a past history of loss of speech for last 2 years and fits. Previous CT-head showed cerebral atrophy. On examination he was alert and aphasic. His extra ocular movements were full. He had marked right hemiparesis with brisk reflexes were and an extensor planter response. CT-angiogram was done which showed moyamoya disease. He improved with aspirin and rehabilitation. Conclusion: Moyamoya disease is a rare cause of stroke in children and should be included in the differential diagnosis of stroke in children.

Marked Improvement of Hepatitis C Associated Chronic Inflammatory Demyelinating Polyneuropathy with Antiviral Therapy: A Case Report. *Ghulam Shabbir, Nadeem Ahmed, Bhojo Khealani, Assadullah, Nadir Ali Syed. Section of Neurology & Dept. of Neurophysiology, Aga Khan University Hospital, Karachi, Pakistan.*

Background: CIDP is a progressive or relapsing immune mediated disorder often responsive to corticosteroids, IV immunoglobulin & plasma exchange. Hepatitis C is common cause of death in patient having chronic hepatic disorder & affecting approx. 1 out of 10-20 population of Pakistan. Hepatitis C may be associated with peripheral neuropathies mainly axonal, chronic as well as acute cryoglobulinemia, and association with CIDP is less commonly explained. To date the optimal antiviral treatment of Hepatitis C viral infection is the combination of peg interferon-a with ribavirin. Case Report: 44 years old, male with hepatitis C associated CIDP improved with combination of antiviral therapy like interferon-a and Ribavirin. Five weeks after starting therapy he felt 80% improvement in symptoms (muscle power & numbness). Viral eradication was confirmed (HCV PCR negative) after treatment patient became symptoms free. Repeat NCS/EMG turned to be normal except absent bilateral H-reflex (possibly secondary to underlying diabetes mellitus). Conclusions: We described a patient with hepatitis C associated CIDP that markedly improved with the antiviral therapy. The current case report may be an initiative to do more studies in the different canters, particularly in countries where HCV-infection is more common, like in our country Pakistan.

Snap Crackle & Pop - a Normal Variant of Increased Insertional Activity: May Be Misleading for Electromyographer: Case Series. *Ghulam Shabbir, Nadeem Ahmed, Bhojo A. Khealani, Assadullah, Ghulam Qadir Buledhi, Mustafa Khan. Department of Neurophysiology Aga Khan University Hospital Karachi and Liaquat University of Medical Sciences Jamshoro, Pakistan*

Background: Placing a needle recording electrode into healthy muscle tissue & advancing, it in quick but short intervals 'JABS' results in brief bursts of electrical potentials. This results in a crisp sound, with a series of negative & positive spikes. These waveforms are referred to as insertional activity the total time of insertional activity persisting after needle cessation has a mean of 48 +_ 18 ms. The total time of insertional activity for monopolar needle is less than 230 ms & that of concentric needle less than 300ms. Increased insertion activity is more than 300-500ms, indicating denervation, myopathy or a normal variant, which is called as Snap, Crackle & Pop. Very few case reports of Snap, crackle & Pop are reported. This is usually seen in young male patients, having history of bodybuilding, (muscle making exercises). Methods & Results: Four male patients, having well built were referred for NCS/EMG study with query of some possible neuromuscular problem. In all four patients we noted diffuse increased insertional activity on needle exam, normal morphology of MUAP with normal recruitment & full interference pattern noted. One patient has had prior NCS/EMG that was concluded as either diffuse neurogenic process or inflammatory myopathy. Our neurophysiologic data suggests that the needle EMG examination showed diffuse increased insertional activity, including genioglossus and frontalis muscles is indicating a normal variant called as Snap, Crackle & Pop. Conclusions: Electromyographer should be aware about the normal variants/artifacts like Snap, Crackle & Pop, rather than concluding falsely as abnormal. Further large studies may be more helpful for the pathogenesis of this entity.

Designing Objective Structured Clinical Examination (OSCE) for Neurology Residency Examination using 'Paired Comparison Technique'. *Mughis Sheerani, Ghazala Perveen, Mubashira Hashmi, Nausheen Ahmed, Sonya Hanif, Royala Zaka. Aga Khan University, Karachi.*

Objective: To design and develop an Objective Structured Clinical Examination (OSCE) to assess affective domain and psychomotor skills of the Neurology Residents at different levels of training during their residency program. Methods: Seventeen Neurology faculty members at different teaching Hospitals of Karachi were interviewed and were given the questionnaire. The neurology faculty was asked to identify the most important domains that cannot be tested by multiple choice questions (MCQs) or short essay questions (SEQs). The responses were taken on a specially designed form that compared each modality against each other (Paired comparison technique). The responses from the Neurology faculty were entered in the grid and probabilities were calculated. The most common attributes that can be tested in OSCE type examination were divided into groups as follows: Group1 communication skills/Ethics; Group2: Interpret: EEG/EMG/ Neuro-radiology; Group 3: History taking skills; Group 4:

Examination/ localization; Group5: Lumbar puncture skills. Results: The probabilities calculated were as follows: Communication skills and Ethics compared to EEG/EMG/Neuroradiology was 0.5, to History taking was 0.9, to Examination/ Localization 0.88 and compared to Lumbar puncture was 0.41. EEG/EMG/Neuroradiology when compared to Communication skills was 0.48, to History taking was 0.70, to Examination/localization was 0.90 and to Lumbar puncture skills was 0.23. History taking skills when compared to Communication skills and Ethics was 0.10, EEG/EMG/Neuroradiology was 0.30, Examination/localization was 0.24 and Lumbar puncture skills was 0.52. Examination/Localization when compared to Communication skills/Ethics was 0.12, to EEG/EMG/Neuroradiology was 0.10, to History taking was 0.76, to Lumbar puncture was 0.17. Lumbar puncture when compared to Communication skills/Ethics was 0.59, to EEG/EMG/Neuroradiology 0.77, to History taking 0.48 and compared to Examination/localization was 0.83. Conclusion: The probability of selecting 'history taking skills' and 'localization' was the highest as compared to the skills of 'lumbar puncture' and interpreting tests results like electromyography (EMG) and electroencephalography (EEG). Surprisingly, the probability of selecting 'communications skills' and 'ethics' over history taking and localization was lower than one would have anticipated.

Types of Childhood Onset Headaches in Patients Reporting to a Neurology Centre in Karachi. Arif D. Herekar. Dow University of Health Sciences, Karachi.

Objective: To evaluate the prevalence and variety of childhood onset headaches type in a Pakistani population. Design: Descriptive Study. Place and Duration of Study: Neuro Diagnostic Centre, Hamdard University Hospital (Taj Medical Complex), Karachi, from July 2006 to December 2007. Patients and Methods: 50 headache patients were included in this study who reported to a Private Neurology Centre and complained of headaches between July 2006 to December 2007. Ages ranged between 1 and 17 years (age of onset ranged between 03 months and 17 years). Results: 41 patients (82%) were diagnosed as migraine, 5 patients (10%) mixed headaches, 4 patients (8%) suffered tension headaches. Diagnosis was based on IHS criteria. 52% (26 patients) were male and 48% (24 patients) were female. Mean age of onset was 7.67 years male and 7.61 years female. The mean interval between age of onset and first neurology consult was 3.27 years. 50% (25 patients) of the patients were found to have familial headaches. Conclusion: This is a study with 50 patients; migraine being the dominant headache also occurring in very small children as small as 4

Subacute sclerosing panencephalitis - the dilemma continues. Report of three cases from Shifa International Hospital, Islamabad. Nauman Saleem

Siddiqui, Ismail Khatri, Arsalan Ahmad, Maimoona Siddiqui. Division of Neurology, Shifa College of Medicine and Shifa International Hospitals, Islamabad.

Introduction: Subacute sclerosing panencephalitis (SSPE) is a neurodegenerative disease of childhood that was considered to become rare after measles vaccination. We present 3 cases recently diagnosed in our tertiary care neurology clinic. Case 1: An 18 year old girl presented with jerky movements of the limbs for ten months, rigidity of right side of body for one month and tremors in right hand for one week. She had chicken pox and measles at age of 13-14 years. She was conscious but slow to respond with intermittent whole body jitter. She had asymmetric spasticity with brisk reflexes and flexor plantars. MRI showed high signal in right basal ganglia. EEG showed relatively preserved background with frequent periodic complexes at interval of 4-10 seconds favoring SSPE. She was started on isoprinosine. At three months, her symptoms had worsened with increased spasticity and gait difficulty. Case 2: A 5 year old boy presented with involuntary jerks and falls for past 3-4 months. On examination he was awake with intermittent myoclonic jerks more on left side of body. Reflexes were diffusely brisk with mute plantars. Past medical history was unremarkable. MRI showed small right basal ganglia lesion. EEG showed bursts of high amplitude activity occurring at an interval of 4-7 seconds. CSF showed increased proteins. He was started on isoprinosine and showed slight improvement in first 6 months of treatment. Case 3: A 13 year old girl presented with progressive jerky movement of the head for five months and loss of speech for 4 months. She had fever 2 months prior followed by weakness of left side of body with urinary and fecal incontinence. She was awake, confused, with left hemiparesis and diminished reflexes on left, and upgoing plantar on left. MRI showed bilateral increased periventricular signal intensity areas more on right side. EEG showed slow background with periodic high amplitude discharges. She was started on isoprinosine and showed modest improvement at three months. Conclusions: SSPE remains a challenge today despite measles vaccination. The age range is broad and involves both extremes of pediatric population. MRIs are frequently abnormal in these patients. Isoprinosine has modest symptomatic improvement in 2 of our patients.

Primary Reading Epilepsy, a rare entity. Faika Usman¹, Adeel Rahman¹, Ali Hassan¹, Fawad Kaiser² Arsalan Ahmad ¹. ¹ Division of Neurology, ² Department of Psychiatry, Shifa International Hospitals, Islamabad.

Background: Reading epilepsy (RE) is a form of reflex epilepsy currently classified as idiopathic localization-related epilepsy. It is a benign epileptic syndrome which occurs in response to reading. In some cases it is

stimulated by only one stimulus such as reading and can thus be termed as "pure reflex epilepsy" or primary reading epilepsy (PRE) and in other cases some specific triggering factors apart from reading may be recognized that is secondary reading epilepsy (SRE). Case Report: A 21 years old right handed male presented to the neurology clinic in 2004 with a four years history of jerking of the jaw and twitching of the right side of the face associated with reading. He also had one episode of jerks of the jaw and face followed by generalized jerking of all the four limbs and loss of consciousness. According to the patient he gets jaw and throat jerks even while reading quietly without moving his mouth, lips or tongue. He also had long-standing history of depressive illness with attention seeking behavior and has been under regular care of a psychiatrist. He had no family history of epilepsy. His general and neurological examination, hematological studies and MRI brain were normal. Reading a book during the EEG recording provoked spike and wave activity consistently. He responded well to carbamazepine and valproate with marked reduction in seizure frequency. Conclusion: We describe a 21 year-old male with clinical and electrophysiological features of PRE. To our knowledge our case is the first documented case in Pakistan.

Balo's Systemic Sclerosis: A rare fulminant variant of MS. Maryam Jameel¹, Munir I. Malik², Arsalan Ahmad¹. ¹Division of Neurology, ²Department of Pediatrics, Shifa International Hospitals, Islamabad.

Introduction: Balo's concentric sclerosis (BCS) is a fulminant variant of Multiple Sclerosis that is distinguished by its unique concentric pathology characterized by alternating rims of myelin preservation and loss giving the lesions the macro and microscopic structure of onion bulbs. Most cases are diagnosed postmortem. We report a case of Balo's systemic sclerosis. Case Report: A 13 year old female with no known comorbidities presented with weakness of right half of body, speech difficulty and irritable behavior for 1 week. She had an episode of sudden loss of vision in both eyes preceded by severe headache 15 days back. On neurological examination she was awake, alert and obeying commands. She had expressive dysphasia. There was no papilledema or papillitis on fundoscopy, but she had an afferent papillary defect. Color vision was normal. Extraocular movements were full, there was no diplopia. Pupils were bilaterally equal and reactive. Motor examination showed power 0/5 in right arm and leg, with brisk reflexes and an extensor plantar response. Cerebellar examination was normal. Sensations were normal. VEP revealed bilateral optic pathway dysfunction. MRI brain with contrast showed concentric multiple white matter lesions with a halo around them, but no significant enhancement on contrast. Oligoclonal bands were negative on CSF examination. She

was treated with methylprednisolone 1gm IV for five days. Her weakness, speech and vision improved significantly. Mitoxatrone therapy is planned. To our knowledge BCS is not been reported from Pakistan.

Causes of Sudden Severe Headaches presenting To the Emergency Department. Zaib Un Nisah, Mazhar Badshah, Muhammad Tariq, Sidra Aurangzeb. Department of neurology and E&A, PIMS, Islamabad

Headache is one of the most common presenting complaints in Emergency department (ER). Distinguishing patients with ominous headaches from those with a primary headache disorder can be challenging for the ER physician. This prospective study was performed on patients presenting in the ER of PIMS, Islamabad, with the complaints of sudden, severe headache and no history of head trauma. For each included patient a standardized data collection form was completed, recording demographic information, clinical history and examination. Xray PNS, Brain Imaging and lumbar puncture was done where indicated, to identify the cause of headache. Various clinical and demographic features were assessed for their ability to predict secondary headache.

Types of Strokes in Hypertension. Sidra Aurangzeb, Zaib Un Nisah, Muhammad Tariq, Mazhar Badshah, Muhammad Irshad, Rao Suhail Y. Khan. Department of Neurology, Pakistan Institute of Medical Sciences, Islamabad

Hypertension is a risk factor for both ischemic and hemorrhagic stroke. Meta-analyses have shown contradictory findings; one showed similar associations for both stroke subtypes, and another, metanalysis of Asian studies, showed a stronger association with haemorrhagic stroke than with ischaemic stroke. We examined the association of hypertension with various subtypes of stroke. The present study was carried out at neurology department of PIMS, Islamabad on hypertensive, non diabetic patients admitted with stroke. A total of 223 patients were included in the study over a period of twelve months. Ischemic strokes were further classified as anterior cerebral artery infarcts, middle cerebral artery infarcts or posterior infarcts. Intracerebral hemorrhages were classified by location, that is, lobar and non-lobar (predominantly basal ganglia, thalamus, cerebellum, and brain stem). The frequency of different types of stroke in hypertensive patients was assessed.

Comparison of the demyelinating and axonal subtypes of Guillain-Barré syndromes. Sidra Aurangzeb, Zaib Un Nisah, Muhammad Tariq, Mazhar Badshah, Muhammad Irshad, Rao Suhail Y. Khan. Department of Neurology, Pakistan Institute of Medical Sciences, Islamabad

Patients were classified as having acute inflammatory demyelinating polyneuropathy (AIDP) or acute motor axonal neuropathy (AMAN) based on electrodiagnostic criteria. A comparison of the AIDP and AMAN subtypes of Guillain-Barré syndromes was done in terms of age, gender, clinical features (antecedent infection, duration of illness, time to peak disability, limb weakness, bifacial weakness, cranial nerve involvement, bulbar paralysis, respiratory involvement and autonomic dysfunction), electrophysiologic data and short term outcome

Outcome of Severe Carpal Tunnel Syndrome after surgery. *Mazhar Badshah, Muhammad Irshad. Department of neurology, Pakistan Institute of Medical Sciences, Islamabad*

Clinical and electrophysiological examination was conducted before surgical decompression. Carpal Tunnel syndrome was divided into mild, moderate, and severe groups based on preoperative electrophysiological severity. Patients with severe CTS underwent decompression procedure and nerve conduction studies were repeated 6 months post-op. Patients were also asked to answer several questions regarding their clinical symptoms to see how they improved (resolution of nocturnal paresthesias, decreased sensory complaints and pain). Improvement in post-op electrophysiological parameters was also recorded.

Unusual Precipitants of Seizure. *Minhas Farah, Mogal Zarine, Aziz Hasan.*

Objective: To present unusual precipitants of seizures in patients with epilepsy. Method: A retrospective study to document unusual precipitants in patients with epilepsy was conducted. All the patients were seen at the outpatient department of the National Epilepsy Centre, Karachi, from April 2007 to January 2008. Results: A total of 529 patients were seen (327 males and 202 females). 253 patients had distinct precipitants of seizures. The precipitants of seizures in three patients were not usual. These were the sight of blood, a corpse and meat. The sight of blood or a corpse precipitated seizures in two patients. Both the patients were males, whose ages were 16 years and 20 years. Seizures were precipitated in a 08 years old female patient on seeing raw or cooked meat. Conclusion: The discussed precipitants are unusual and have not been reported to our knowledge. Most physicians would tend to consider these as precipitants of syncope rather than epilepsy.

The Prevalence of Childhood Disability (0-5 years) in a Rural District of Sind, Pakistan. *Shahnaz H Ibrahim, Ayesha Yousufzai, Farhana Shahid, Zulfiqar Bhutta. Department of Pediatrics and Child health, Aga Khan University Hospital.*

Background: Prevalence of moderate to severe impairment leading to disability in a developing country amongst 0-4 years of age group varies from 1.3%. According to 1998 National Census of Pakistan 2.5% of the total population had a disability of some sorts. To date no work has been done to identify the disability burden in children in our country. Objective: To determine the burden of disability in children under 5 years in a larger district of Sukkar. To identify the risk factors for the disability. Method: A Cross sectional Survey was carried out .It was a part of a large trial to evaluate the effectiveness of a single dose of vitamin A at birth. Study duration was 4 months. The study area was district Sukkar /Rohri. Study instruments included, the household questionnaire, 0- 2 years-child screening tool, Ten Questionnaire, Werner's tool for validity and the Risk Factor Questionnaire. This study was approved by the ethics committee. Results: The total population studied was 176039. Children under 5 years formed 18 %of the population. Preliminary data showed that the prevalence of disability under 2 years was 0.84%and 2-5years was 1.51%. Overall disability under 5 years was 1.24%. 71% had been delivered by a Dai and 72% were delivered at home. 80% had a consanguineous marriage. Conclusion: Preliminary report from the area shows that disability in children in Pakistan is approximately the same as reported in world literature. Mode of delivery and place of delivery play a major role in the disability rate.

Familial Cerebral Cavernous Malformation (CCM). *M Athar Javed, Khalid Farooq Neurology Department, KEMU / Mayo hospital, Lahore.*

Objective: Clinical features and neuroimaging finding in a series of six patients with cerebral cavernous malformations are studied. Methods: This is a retrospective analytical study of six consecutive cases of CCMs admitted in neurology department KEMU, Mayo hospital, Lahore over a period of two years from November 2006 till October 2008. Case records were reviewed. Demographic details, clinical presentations and neuroimaging features were recorded on a specified proforma and results analyzed. Results: Out of the six patients studied, there were 2 males and 4 females with a male to female ratio of 1:2. The mean age was 35.7 years with range from 15-42. Most common presentation 50% (3/6) was due to intracerebral hemorrhage causing focal neurological deficit. One patient presented with generalized seizure, another with resting and postural tremor and last patient had non specific generalized headache. Three patients belonged to one family of four siblings but their parents or other close relatives had no history of CCM. MRI brain was done in all patients and showed evidence of multiple CCM in three sibling of affected family with evidence of old and new hemorrhages. These CCMs were found in both cerebral

hemispheres especially deep white matter of frontoparietal lobes and thalamic region without any brainstem involvement. There was only single CCM on MRI of each of the remaining three patients without a family history of CCM. These CCMs were located in pons, basal ganglia and left frontal cortex. Conclusion: Cerebral cavernous malformations most commonly presents with intracerebral hemorrhage causing focal deficits. They commonly present between 30-50 years of age and are more common in females. Multiple CCMs are always familial but whether family members need to be screened to detect asymptomatic affected members remained a question? The familial CCM cases have never been reported in Pakistan till date.

Multifocal Acquired Demyelinating Sensory motor neuropathy (MADSAM neuropathy): Diagnosis and Therapeutic approach. *M Athar Javed, Ejaz Ahmad Neurology Department, KEMU / Mayo hospital, Lahore.*

Objective: Clinical, electrophysiological features, course of illness and response to treatment in patient with MADSAM neuropathy is discussed. Method: Detailed history and examination of this patient was recorded. Electrophysiological study was performed which included the detailed sensory motor nerve conduction studies in all four limbs and needle EMG. Routine investigations including ESR, CBC, urea creatinine, LFTs, and fasting blood glucose was done. Other investigations like vasculitic screening, RA factor, ANA, ENA, P-ANCA, C-ANCA, Angiotensin converting enzyme (ACE), VDRL, TPHA, serum protein electrophoresis and serum B12 levels were also done to rule out any connective tissue disease, sarcoidosis, paraproteinaemia and treponemal infection etc. Lumbar puncture was performed and CSF was analyzed for protein, glucose and white cell count. Result: Clinically there was history of progressive but patchy sensory and motor symptoms over the period of 3 years which became worse 6 months before presentation. Neurological examination revealed motor weakness in distribution of left radial, ulnar and peroneal nerves. Sensory examination revealed decreased sensations in the distribution of right ulnar and left sural and superficial peroneal nerves. Nerve conduction studies showed evidence of conduction block in left ulnar, right radial, both tibial and left peroneal motor nerves. The sensory nerve conduction studies showed involvement of right ulnar and superficial peroneal nerves. Cerebrospinal fluid examination was normal. All biochemical, vasculitic and other profile as mention above was normal. Clinically picture was consistent with MADSAM neuropathy. Patient was treated with a course of intravenous immunoglobulin at 400mg/kg body wt daily for five days. There was quick improvement of both sensory and motor symptoms. However symptoms recurred after 6 weeks and patient was given another course of intravenous immunoglobulin.

Since then patient has been put on monthly single dose of intravenous immunoglobulin at 400mg/kg body. Motor symptoms responded well but residual sensory symptoms have persisted. Conclusion: MADSAM neuropathy is rare condition but should be included in differential diagnosis of mononeuritis multiplex. This disorder responds well to treatment with immunoglobulin (IgG) especially motor symptoms better than sensory symptoms.

Etiological frequencies of Transverse Myelopathy in Local Population: another 3rd world scenario? *Dr M Athar Javed, Dr. Adnan Hameed Gill Neurology Department, KEMU / Mayo Hospital Lahore.*

Objective: To analyze etiology of Transverse Myelopathy in local population, and factors resulting in delay in the management. Materials and Methods: This is a hospital based prospective descriptive study done at Department of Neurology, Mayo Hospital, King Edward Medical University, Lahore. We enrolled sixty five consecutive patients admitted with spastic paraplegia or quadriplegia from January 2008 till October 2008. Magnetic Resonance Imaging (MRI) of spinal cord was done in all patients and CSF examination was done in patients without any evidence of compressive lesion on imaging. Other investigations including ESR, vasculitic profile, VDRL, vitamin B12 levels etc. were done where needed on clinical grounds. Descriptive statistical analysis was performed using SPSS software. Results: Data of 65 patients was collected. Thirty eight patients (58%) were male, and 27 (42%) female with M:F ratio 1.4:1. Mean age was 36.7+ 2.13years with range from 13-80 years. Median age was 32 years. Twenty seven (42%) patients presented with paraplegia and 38(58%) with quadriplegia. Most common causes were tuberculosis of spine with abscess formation resulting in cord compression and was seen in 26(40%) followed by transverse myelitis in 17(26%). Other causes in descending order were spondylodegenerative disc with ligamentous calcification and thickening 7(10.8%), syringomyelia 3(4.6%), primary spinal cord tumors 3(4.6%), myelomalacia 3(4.6%), disc prolapse 2(3.1%), lymphoma 2(3.1%), and idiopathic cord atrophy 2(3.1%). Data analysis of last forty patients showed a mean delay of 210 + 42 days from onset of symptoms to diagnosis. Most common causes were delayed referred to specialized tertiary care centers and non-availability of urgent MRI facilities especially in governmental hospitals. Conclusion: The results of this study showed that tuberculosis is the leading and potentially treatable cause of transverse myelopathy. There was unacceptable delay in diagnosis with loss of ideal and precious time for surgical decompression resulting in poor outcome and permanent disability. We recommend a national campaign for awareness of this problem especially need for urgent time specific management of all patients with transverse myelopathy to

prevent permanent disabilities.

Frequency of Extra cranial Large Artery Stenosis in Non-cardioembolic Ischemic Strokes and TIAs. *Dr. Javed Iqbal, Dr M Athar Javed Neurology Department, KEMU / Mayo Hospital Lahore.*

Objective: To determine the frequency of extra cranial large artery stenosis in patients with non-cardioembolic ischemic strokes and transient ischemic attacks (TIAs) in our local population. **Material and Methods:** This is a prospective descriptive study done at department of Neurology, Mayo Hospital, King Edward Medical University, Lahore. We enrolled 141 consecutive patients admitted with non-cardio embolic ischemic strokes and TIAs from January 2008 till October 2008. Doppler scan of carotid and vertebral vessels in the neck was done in all patients. Degree of stenosis was divided into mild (<30%), moderate (30-70%) and severe (>70%). Data was analyzed by SPSS software. **Results :** Total of 141 patients were enrolled. Eighty one (57%) patients were male, and 60(43%) female with M: F ratio of 1.35:1. Mean age was 57.9+13.1 years with range from 20-80 years. Eighty three (59%) patients had extra cranial large artery stenosis: severe stenosis in 34(24%) patients; moderate stenosis in 40(28%); and mild stenosis in 10(7%) in one of the two internal carotid arteries. Six (4.2%) had complete occlusion of ICA on one side, 2(1.4%) patients had bilateral severe stenosis and only 2 patients (1.4%) had severe stenosis in common carotid artery. Frequencies of major modifiable risk factors were as follows: hypertension 93 (66%) patients; dyslipidemia 61(43%); diabetes mellitus 44 (31%); ischemic heart disease 41(29%), smoking 37 (26%); atrial fibrillation 10(7.1%); and history of TIA 8(5.7%). **Conclusion:** This study, for the first time in Pakistan, has shown that frequency of extra cranial large artery stenosis is very high in our local population compared with old belief; however a larger study is needed to confirm these findings. Every patient of ischemic stroke and TIA should be screened for extra cranial stenosis so that potential benefits of carotid surgery and other procedures can be utilized in severe cases and more aggressive medical therapy in mild to moderate cases.

Cerebral Venous Thrombosis: etiology, clinical and radiological features, and outcome in 37 cases. *M Athar Javed, Muhammad Nasrullah Department of Neurology, King Edward Medical University / Mayo Hospital, Lahore.*

Background: To study the clinical and radiological features of cerebral venous thrombosis (CVT), etiology, the response to treatment with anticoagulation, and the outcome. **Methods:** This is a retrospective analytical study of cases of cerebral venous thrombosis admitted from

January 2000 to November 2008. Only those cases in which diagnosis of cerebral venous thrombosis was confirmed by magnetic resonance venography (MRV) or CT venography (CTV) were included in this study. Clinical and radiological features were reviewed. Laboratory investigations were analyzed for possible etiology of CVT. Treatment received and outcome was assessed by modified Rankin scale (mRS). Statistical analysis was performed using the SPSS software. **Results:** A total of 37 cases were identified, 23 were female (64%) and 14 male (36%) with F: M ratio of 1.64: 1. Mean age was 34.5 years (range 10-65 years). The most common symptoms were headache (90%), vomiting (65%), seizures (40%), and impairment in conscious level (35%). Most common signs were bilateral papilloedema (45%), hemiparesis or hemiplegia (30%), quadriparesis (25%), and cranial nerve palsies (20%). Neuroimaging features on pre and post contrast CT scan and / or MRI were variable among all patients. The most frequently involved dural sinus was one of the lateral sinuses (85%), followed by superior sagittal sinus (75%), and straight sinus (20%). Most common causes were postpartum state in 10(28%), use of oral contraceptive pills 6(17%), protein S deficiency 4(10%), lupus anticoagulants 2(5.5%), and SLE 2(5.5%). There was one case (3%) each of following disorders: polycythemia rubra vera, acute myeloblastic leukemia, non-Hodgkin's lymphoma, chicken pox encephalitis and tuberculous meningitis. At the end of one month follow up, Twenty nine (82%) cases recovered completely while 4(10%) were moderately impaired (mRS=3), and two (5%) had mild impairment (mRS=2). Only one (3%) patient died. **Conclusion:** Cerebral venous thrombosis is a rare condition with variable clinical and radiological features at presentation making the diagnosis difficult. A postpartum state was the most common cause. Early diagnosis and prompt treatment with anticoagulation resulted in better outcome even in the presence of hemorrhagic lesions.

EEG Changes in Febrile Convulsions. *Bhojwani Shanti Lal, Jamro Saifullah, Siddiqui Ibrahim Chandka Medical College Children Hospital Larkana.*

Objective: To see EEG changes in febrile fit children. **Place and Duration:** This prospective study was carried out in the department of pediatric and neurology Chandka Medical College Larkana. From February 2007 to August 2007, the duration of study was 6month. **Investigation:** EEG was done in all cases of after 7days. 10-20 international system of montage placement and the standard guideline given by American EEG society used. **Result:** Total patients included in this study were 50 out of which 60% were male, 40% female. 80% of children were between age of 6months to 3years, 80% of children had simple febrile fits and 20% complex febrile fits, positive family history of febrile fits found in 10% and history of cousin marriage

found in 20% febrile fits children. Most common cause of febrile illness found was respiratory tract infection 65%, Gastroenteritis 25% and Malaria 10%. Abnormal EEG changes found in 10% of febrile fits children while 90% of febrile fits children EEG was within normal limit. Conclusion: Febrile fits is a common problem in pediatric age group in Pakistan, reliable data on EEG changes in febrile fits are not available, so more local studies are required to see the exact incidence of EEG changes in febrile fits. There is a need to disseminate information regarding the acute management of febrile fits, intermittent prophylaxes and proper follow up of febrile fits children

A Case Study of Concussion Syndrome. *Tahir Pervez, Jinnah Postgraduate Medical College, Karachi.*

Cadet X 19 years old, belongs to an average income family did his Matric and FSc from Quetta with 'C' grades. He played cricket, football, boxing at school and college level. Before head injury, he remained involved in all the training activities with fair level of zeal and enthusiasm. He fell down in the ground during running. He was found fully conscious after fall, no bleeding or cut was seen outside the skull however, a sign of "goose egg" on his forehead was observe. Manifested symptoms were; distortion of memory, difficulty in concentrating, slow thinking, slow reflexes perseveration, feelings of irritation and aggression, lose of appetite sensitivity to noise sleeplessness, headache and defiant attitude. His clinical examination and Psychology Test results when compared revealed a gross deterioration between both the test findings i.e. before and after the head injury. His history does not reveal any previous record of head injury. He was closely monitored regularly; confidence building and supporting techniques were applied. He recovered gradually without any medicine and he was seen in the normal state of mind and behavior after five week.

A Case Report on Non Convulsive Status Epilepticus (NCSE) Presenting as a Behavior. *Shah Moazama, Minhas Farah, Ahmed Zeeshan and Haider Aneela National Epilepsy center, Karachi.*

Objective: The purpose of this article is to present a case in which it was clinically difficult to differentiate between hyperactivity caused by behaviour disorder versus the hyperactivity caused by NCSE. Method: A 6 _ year old male presented at the National Epilepsy Centre with hyperactivity and episodes of staring for a few seconds followed by a fall for one year. An video-electroencephalograph showed continuous generalized epileptiform activity. A diagnosis of NCSE was made and the patient was started on anti-epileptic medication. After treatment the episodes of staring followed by fall completely resolved and there was a marked reduction in

hyperactivity. Serial EEGs showed resolution of NCSE. Conclusion: Clinically NCSE can be missed by physicians especially if it presents as a behaviour disorder. A video-electroencephalograph should be considered as a method of choice in the diagnostic evaluation of NCSE.

Epilepsy Awareness Posters: a successful medium of public education in Pakistan. *Zarine Mogal, Ghulam Mustafa Khanzada, S. Wasim Akhtar, Hasan Aziz & Shaukat Ali. National Epilepsy Centre, JPMC, Karachi, Pakistan.*

Background: Lack of awareness about epilepsy and its treatability is the single most important reason of undue stigmatization and existing treatment gap. Objective: To create epilepsy awareness amongst school children, teachers and other school personnel through a novel medium of Epilepsy Awareness Posters. Methods: This study is one of the several ongoing outreach projects of the Comprehensive Epilepsy Control Programme of Pakistan (CECP) to create awareness about epilepsy and its treatability amongst the masses. Indigenously created eye-catching illustrated posters of 18 inches x 30 inches size are affixed in schools and madrassahs all over Pakistan. The posters are affixed at the most prominent location in schools for easy viewing of students, teachers, other school staff and parents visiting the schools. Results: In this ongoing project, to date, epilepsy awareness posters have been affixed in 15,000 schools and madrassahs in all four provinces of Pakistan. We are seeing good results of our addressing at this ground root level. Conclusion: Epilepsy Awareness Posters is a novel medium through which a very important section of the country's population is imparted epilepsy education. It has proven to be a time and cost effective medium. This medium of public awareness on such a large scale is unique to CECP.

Perception of Epilepsy amongst Professionals in Pakistan. *Ghulam Mustafa Khanzada, Zarine Mogal, Hasan Aziz, Shaukat Ali, National Epilepsy Centre, JPMC, Karachi, Pakistan.*

Purpose: To assess the perception of epilepsy amongst professionals in Pakistan. Method: A structured questionnaire was applied on a one to one basis to diverse professionals in the metropolitan city of Karachi between September and December 2006. Results: Of the 307 respondents (234 males, 73 females), 97.4% had heard/read about epilepsy. Perceived causes: brain infection (46.3%), God's will (36.8%), mental stress (21.2%). Symptoms unconsciousness & jerking (58.3 %), disconnection (22.1%). on witnessing a fit 30% would rush to the hospital. For 16.3% epilepsy was a hereditary disorder, 7.5% considered contagious, 28% equated to insanity. Perception it affected: mental capability (50.8%),

education (59.3%), employment (41.4%). Advocating education in normal schools by 84%, marriage by 76.5%, bear children by 67.1% but 35.5% would not allow their children to marry an epileptic, 18.2% would cancel marriage immediately if revealed the spouse to be has epilepsy. Eighty-four percent parents would reveal epilepsy at admission and 19.9% object to epileptic in their child's class. Epileptics would not be employed by 23.8%; 21.2% would employ them sub-optimally and 19.2% would have reservations if colleague had epilepsy. Seventy-five percent perceived epilepsy treatable, 80.1% preferred allopathic treatment and 74.9% would prefer first consultation with a specialist. Conclusions: Knowledge about epilepsy and its treatment amongst professionals is fair. Their approach towards a person with epilepsy is generally generous but stigmatization on marital and employment issues was significant. There is still a high scope in working towards educating this important minority with a major influence in society's decision-makings.

Nephritis and Charcot Marie Tooth Disease - An Unusual Association. *Urooj Taheed Baluch, Isma G Kiani, Mazhar Badshah, Ghias Butt, Sameeh J Khan, Pakistan Institute of Medical Sciences, Islamabad.*

This is report of 24 year old male who presented to pims with uremic symptoms secondary to chronic glomerulonephritis. On examination he was found to have features of peripheral neuropathy which was confirmed as Charcot-Marie-Tooth type 1 on nerve conduction studies. Almost 20 cases of glomerular disease, mainly focal segmental glomerulosclerosis have been associated with the Charcot-Marie-Tooth world wide, making this 21st case of series and first from Pakistan.

The enigma of disappearing neurological lesions. *Abdul Salam, Ismail A. Khatri, Arsalan Ahmad, Maimoona Siddiqui, Aamer N. Ahmad, Division Of Neurology, Department of Medicine, Shifa International Hospital, Islamabad.*

Introduction: Brain lesions are not always diagnosed accurately even after extensive work up. Unexplained brain lesions may disappear after starting steroids. Biopsy of brain is important before starting steroids. We report one case of unexplained brain lesions which disappeared completely after starting steroids. Case report: A 77 year old man with history of diabetes mellitus, hypertension, left subdural hematoma status post craniotomy 10 years ago, presented with loss of speech, confusion, inability to walk, right sided weakness and urinary incontinence for 1 week. On neurological examination patient was awake, and alert but was unable to speak. Cranial nerve examination was normal. Motor examination showed power 4/5 in right arm and leg with bilateral symmetrical

reflexes and plantars were bilaterally down going. CT scan of brain showed multiple enhancing nodular lesion with perifocal edema involving bilateral cerebral hemispheres more marked on left with features highly suggestive of metastatic disease process. CT chest, abdomen and pelvis were unremarkable. Tumor markers were unremarkable. MRI brain showed multiple lesions which could be metastatic lesion or lymphoma. He was advised brain biopsy but family refused. He was started on steroids (dexamethasone 4mg intravenously 6 hourly initially with small maintenance oral dose in long run). Follow up MRI showed interval disappearance of brain lesions with interval mild atrophy. Conclusion: Unexplained brain lesions may disappear after starting steroids and hence biopsy of brain is important before starting steroids. In this case report, brain lesions disappeared after giving steroids but unfortunately brain biopsy was not done because of family refusal so exact diagnosis remains elusive.

Longterm Clinical Outcome of patients with GBS In Karachi. *Nadeem Memon, Maqsood Ahmed, Nasir Khan, Mustafa Khan, Bhojo A. Khealani.*

Background: Guillain-Barre Syndrome is an acute polyneuropathy, characterized by an ascending paralysis, areflexia and albuminocytological dissociation. In contrast to West, acute outcome of axonal and demyelinating varieties of GBS is reported to be similar in our country. However, there is no published data on longterm outcome of GBS, from Pakistan. Objective: To determine long term outcome of GBS Materials and methods: All patients who were referred to Clinical Neurophysiology laboratory at AKUH, during 2006 and 2007, for electrodiagnostic evaluation of GBS were identified through departmental record/register. The patients with electrodiagnostic data supportive of GBS were interviewed on telephone. Modified Rankin scale was used to measure the outcome. The patients were inquired to determine outcome at 2 weeks, 3 months, 6 months and 12 months. GBS subtypes were determined on basis of Ho et al criteria for GBS subclassification. SPSS version 16.0 was used for analysis. Results: A total of 40 patients were identified and 17 were accessible. Their mean age was 31.4 ± 13.9 years. Twelve (70.6%) were male. Eight (47%) had preceding illness (fever, diarrhea etc). Mean duration of GBS symptoms at the time of electrodiagnostic study was 10.8 days. Six (36%) had AMAN variant, four (23%) had AIDP, and seven (41%) had unclassified GBS. Ten (59%) received IVIG, three (17%) received steroids, and one patient received plasmapheresis. MRDS score was 3 or more (76.5%) at the time of NCS/EMG. At two weeks 35% had MRS 3 or more. At three months none had MRS greater than two. However, at 3 months 18% had mild disability (MRS of 2). At 6 and 12 months all patients had MRS 1 or less (at 6 months 47% had MRS of 1 and at 12 months 23% had MRS of one). Thirteen (76.5%) of

patients achieved completely recovery at one year. Conclusion: Longterm outcome of GBS is excellent. However, a significant minority continue to have mild residual symptoms at one year. These findings require confirmation on large scale prospective study.

Seasonal Variation among Stroke Patients Presenting to Aga Khan Hospital, Karachi. *Muhammad Fahad Saleem, Ayeesha Kamran Kamal, Mohammad Wasay. Department of Medicine (Neurology), Aga Khan University, Karachi.*

Background and Objective: Seasonal variation in stroke is known. There is minimal published data on seasonal variations of stroke in Pakistan. The aim of study was to examine seasonal variation in stroke and its subtypes in patients visiting a Tertiary Care Hospital in Karachi. Methods: Patients admitted in Aga Khan University Hospital, from August 2007 to July 2008 with new stroke, diagnosed on history, clinical examination and CT scan or MRI were included. Patient who developed stroke due to intervention, due to aneurysm rupture and not having neuroimaging to confirm clinical diagnosis were excluded. Results: Patient's age ranged from 18-95 years with mean of 60.9 (SD12.89). 146(62.1%) were male. Out of 235 cases, 82(34.9%) presented in Winter, 69(29.4%) in Spring, 44(18.7%) in Summer and 40(17%) in Autumn. 177(75.3%) had ischemic stroke, out of which 57(24.3%) were in Winter, 52(22.1%) in Spring, 34(14.5%) both in Summer and Autumn. Hemorrhagic stroke occurred in 25(10.6%) in Winter, 17(7.2%) in Spring, 10(4.3%) in Summer and 6(2.6%) in Autumn. In Winter and Spring out of 151 subjects, 109(72.2%) had ischemic strokes and 42(27.8%) had hemorrhagic strokes while in Summer and Autumn out of 84 subjects, 68(80.95%) had ischemic strokes and 16(19.05%) had hemorrhagic strokes. The number of stroke admissions were higher in Winter and Spring months as compared to Summer and autumn months. No significant difference was found in types of stroke due to seasonal variation ($p= 0.3145$). Conclusions: The number of stroke admissions were higher in Winter and Spring months. There is no significant variation in frequency of stroke and its types in different seasons of year in Tertiary Care Hospital in Karachi.

Incidental multiple sclerosis like lesions in asymptomatic patients; Analysis of 864 consecutive MRI at a tertiary care hospital in Karachi, Pakistan. *Mohammad Wasay, Farhan Rizvi*, Muhammad Azeemuddin*, Adnan Yousuf, Sten Fredrikson, Department of Neurology and Radiology*, Aga Khan University, Karachi, Department of Neurology, Karolinska Institute, Stockholm, Sweden*

Background: Multiple sclerosis is uncommon in Pakistan. There is no published data reporting incidental multiple

sclerosis in Pakistan. Objective: To identify asymptomatic patients with Brain MRI lesions suggesting a diagnosis of incidental multiple sclerosis. Methods: Brain MRIs for 864 patients were retrospectively (333) and prospectively (531) reviewed at Aga Khan University Karachi during 2006-7 to identify patients with incidental multiple sclerosis. The lesions were characterized based on Barkhof criteria. Patients were excluded if they had a known history of multiple sclerosis and age less than 15 years and more than 40 years. Results: Six patients out of 864 (0.7%) fulfilled brain MRI criteria suggestive of MS. The reason for MRI was headache (4 patients), recent head injury and headache (1 patient) and subjective memory loss (1 patient). Age range was 17-40 years (mean 33 years). There were four men and two women. None of the patients had risk factors for stroke. Serum B12 (done in 5 patients), Anti nuclear antibodies (done in 2 patients) and ESR (done in 2 patients) were normal. None of the patients underwent CSF analysis or Visual evoke potentials. Mean number of MRI lesions were 6 (range 3-12). None of the patients had any spinal cord lesions (cervical spinal cord MRI done in one patient). Two patients had brain stem lesions. The location of lesions in most patients were deep white matter and periventricular white matter. Conclusion: Although Pakistan is considered a low-prevalence area for MS, approximately 1% of brain MRI scans in patients without clinical MS symptoms showed lesions fulfilling brain MRI criteria of MS. Clinical and radiological follow up of these patients will be helpful to study the natural course.