

## Additional Abstracts

## DUPLEX-ULTRASONOGRAPHY EVALUATION OF NORMAL VERTEBRAL ARTERIES

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Duplex scanning has become widely accepted as a safe noninvasive method for the detection of carotid artery disease. Relative few studies appeared concerning the examination of vertebral arteries because of their difficult visualisation based on their anatomical position and on technical problems.

The purpose of this report is to determine the practical possibilities for the investigation of normal vertebral arteries. The study was performed on 50 normal subjects by using the duplex scanner Diasonica DRF 400 with a 7.5 MHz transducer.

We examined the origin of both vertebral arteries and the longitudinal sections during their cervical course in pretransverse and intertransverse C6-C5, C5-C4, C4-C3 segments by measuring the peak and average systolic velocity and the diameter of the vessel.

During this study we used the ability of our duplex scanner to conduct the flow sampling and the 8-mode imaging simultaneously. Performing this method we were able to distinguish the vertebral arteries by their low resistance flow characteristics in the pretransverse and intertransverse segment C6-C5 in 100%. The technical quality of visualisation especially of the vertebral origin was greatly influenced by the depth of the examined structure.

Using our experiences in examining normal vertebral arteries we diagnosed pathological vertebral findings such as hypo- or aplasia, stenosis and occlusion by noninvasive way.

## INTRATHECAL BACLOFEN APPLICATION FOR THE TREATMENT OF SPASTICITY IN PATIENTS WITH SEVERE HEAD INJURY AND/OR TRAUMATIC SPINAL LESIONS

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Baclofen effectively reduces exaggerated stretch reflexes and muscle tone after oral and intravenous administration and is widely used in the treatment of spasticity due to spinal cord lesions. It is less effective in ameliorating the spasticity after stroke or cerebral palsy. However, since severe spasticity is not adequately alleviated with well tolerated doses of oral baclofen, Penn and Kroin have chosen the intrathecal route of application to overcome this problem.

Patients who suffer from CNS-trauma often develop intrathecal spasticity not responding to conventional physiotherapeutic or oral pharmacological treatment. The persistence of this condition reduces the chance of successful rehabilitation and reintegration of these patients. Due to this problem we tried intrathecal baclofen application in seven patients suffering from traumatic spinal or supraspinal lesions. A positive response was proved by clinical evaluation and polyomyography after intrathecal bolus injection up to 100mg under intensive care conditions.

Patients who showed a good response were implanted a drug device to enable long-term treatment by daily applications.

Besides the reduction of muscle tone we observed a marked decrease or absence of tendon taps, both more pronounced in the lower limbs. In patients with supraspinal lesions much higher doses were needed to achieve similar results.

## 512B/C

## EPIDEMIOLOGY OF EPILEPSY IN INDIA

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There is a paucity of community based prevalence data on Epilepsy in India. In the few studies conducted, a nonprofessional (social worker or field worker) did the house-to-house survey and subsequently the diagnosis was confirmed by a professional. Prevalence rate of epilepsy varied from 2.2 to 9 per 1000 population. A drawback in most studies was that the questionnaire was not appropriately designed to elicit information about nonconvulsive seizures. Further, no uniform definition regarding "active" cases was followed. Bearing these lacunae in mind, a neuroepidemiological study was conducted by us at Gowribidanur, Karnataka, South India, covering a population of 119,290 comprising of semiurban and rural population. House-to-house survey using nonprofessional field workers was conducted and the diagnosis was confirmed by the neurologist during the monthly visit to the "out-reach" neurology services. The symptoms check list (questionnaire) was comprehensive and designed to elicit convulsive and nonconvulsive seizures. The prevalence rate was 4.6 per 1000 population. In this study as the survey programme was "grafted" on to an ongoing community neurology service (NIMHANS-Satellite Centre) the epileptic cases detected in the survey were given expert advice and free treatment at the Gowribidanur satellite centre. Such a model of combining survey with service ensures cooperation of individuals in the community, optimises the time and expertise of the neurologist and importantly fulfills the health needs of the community. These three issues are critical in developing countries where inadequate trained manpower and financial constraints are major problems.

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## AUTONOMIC CARDIOVASCULAR DAMAGE IN CHRONIC ALCOHOLICS

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The neurophysiological and pathological correlates of the sensory-motor damage due to alcoholic polyneuropathy are well established, but, despite its clinical and speculative importance, the autonomic involvement has received less attention. An increased risk for sudden death and arrhythmias has been reported, and vagal damage, investigated by cardiovascular reflexes, was also demonstrated to be frequent in chronic alcoholics (CAs) (Duncan, 1980).

In 21 young abstinent CAs (age  $41.4 \pm 8.2$  years, ethanol daily consumption  $233 \pm 48$  g, duration  $17.0 \pm 8.3$  years; systolic blood pressure  $113 \pm 9.9$  mmHg; diastolic blood pressure  $74 \pm 8.8$  mmHg), we evaluated the autonomic function by means of 4 standard tests (deep-breathing (DB); Valsalva ratio (VR); postural systolic pressure fall (PF); diastolic pressure rise to handgrip (H)). Since DB accounts only for overall heart rate variability, we performed also the cross-correlation function (CC), which quantifies (by means of spectral analysis) only those fluctuations of heart rate similar to those of respiration (obtained by pneumotachograph). DB was abnormal in 7 CAs (33.3%), VR in 1 (4.8%), CC in 4 (19.0%), PF in 2 (9.5%) and H in 13 (61.8%). There was not a strict association between abnormalities of heart rate tests (considered mainly parasympathetic) and abnormalities of blood pressure tests (mainly sympathetic). Autonomic damage, however, was frequent and sympathetic impairment was more common than parasympathetic. The observed depression in vascular reactivity looks in contrast with the known hypertensive effect of alcohol. Further correlations among EMG, biological parameters and the above tests have been considered by means of Multivariate analysis.

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