P-300 wave was recorded using auditory stimuli in 15 patients presenting with post concussion vertigo. The mean latency of the normal P300 recordings was 316.5 msec while that of the delayed recordings was 392.3 msec. 8 Patients had a bilateral and 4 had an unilateral delay in latency. 5 patients had normal latency bilaterally. The severity of symptoms was directly proportinoal to the delay in latency. This pilot study, though suggestive of a correlation between P300 wave and vertigo is inconclusive because of the limited number of patients studied.

Introduction
Endogenous or event related potentials (ERP) are a distinct class of evoked potentials recorded in response to an external stimulus on an event (Starr, 1978). They are independent of the physical characteristics of the stimulus, but involves a cognitive separation of target from non-target stimuli. The P300 wave is the most consistent of the waves. Post-concussion syndrome is a cause of significant morbidity among patients with head injury and lacks objective assessment (Gennarelli 1982). Surprisingly there is no published report correlating P300 finding with symptom in patients with post-concussion vertigo. This study was conducted to assess the role of P300 in the evaluation of post-concussion vertigo and to correlate P-300 findings with symptomatology.

Materials and Methods
This prospective study was carried out at Neurosciences Centre, All India Institute of Medical Sciences over a 14 months period Sept. 1995 to Oct. 1995. Patients of minor head injury with cerebral concussion attending the Neurosurgery OPD or AIIMS Casualty with complaints of post-concussion vertigo were the candidates for the study. The nature of the injury and the patients symptoms were recorded. A P-300 wave was subsequently done in all patients and the amplitude and latency of the wave were noted and then correlated with symptomatology. The recording was done using Nicolet Compact Four machine (Madson-USA) using auditory stimuli. The normal values of P-300 for the machine was standardised using controls. The P-300 waves were considered prolonged when P-300 was longer than control value plus 2SD (standard deviation). The P-300 waves were categorised as (a) normal (b) abnormal (c) or absent depending on the wave pattern (Fig. 1 a, b).
Observations
A total of 15 patients were studied. There were 12 male and 3 female patients with a mean age of 27.5 years. The age ranged from 19-50 years. No children were included in this study. There were 12 patients who had sustained the head injury following a road traffic accident, 2 as a result of fall from height and 1 as a result of direct trauma. All the patients had complaints of vertigo/dizziness since it was the selection criteria. The distribution of the post traumatic symptoms is listed in Table I.

The mean latency of the normal P-300 was 316.5 msec. and that in the delayed group was 392.3. P-300 was normal on both sides in 5 (33%) patients, delayed on both sides in 6 (40%) patients. Four (27%) patients had one side normal with delay on the other side. Symptomatically patients were further divided into (a) mild, (b) moderate and (c) severe, based on subjective criteria. The correlation is presented in Fig. 2.

Results
Among the 5 patients who had bilaterally normal P-300, 4 had mild symptoms, and no one had severe vertigo. Among the 6 patients who had markedly abnormal P-300 wave, 2 each had mild, moderate and severe symptoms.

Illustrations
Case I: (Fig. 3)
FR is a 20 yr. old male patient who came to us 3 days following a RTA where he had suffered a transient loss of consciousness. This CT scan was normal. However, he had complaints of persistent giddiness and weakness. His P-300 wave showed normal latencies. His symptoms disappeared over the next 2 weeks.

Case II (Fig. 4)
A 25 yr./M was brought to the Casualty following a RTA, with loss of consciousness for 2 hrs., associated with vomiting. A CT scan done at the time showed a small (R) temporal polar contusion. He was managed conservatively. On