

FILTRATION BASED CONTINUOUS PLASMA EXCHANGE IN GUILLAIN BARRE SYNDROME

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Guillain Barre Syndrome (GBS) is an acute inflammatory, demyelinating, polyneuropathy that causes acute flaccid paralysis. There are two main methods of treatment for this condition. These include intravenous immunoglobulin infusion and plasmaphoresis. Therapeutic plasma exchange (TPE) by in vitro plasma separation is known to improve the outcome in GBS. However, TPE by filtration has so far not been reported in Sri Lanka. Therefore, this study aims to observe the outcome of continuous TPE using a plasma filter, on GBS patients.

Patients diagnosed as having GBS, by nerve conduction studies and are undergoing continuous TPE within two weeks of the onset of illness at a regional centre were studied over a period of two years. All were cannulated in the femoral vein with a double lumen catheter. TPE was done by ultra filtration method via polypropylene hollow fibre plasma filter using a PRISMA machine. All underwent an initial session of plasma exchange continuously for 48 hours and a subsequent session 2 days later if there was further neuro-deterioration or no clinical improvement. Effectiveness of the therapy was assessed by grading muscle power before and after the TPE and observing the duration of respiratory assistance. Urine output (UOP), blood pressure, pulse rate (PR) and respiratory rate (RR) were recorded before, during and after TPE. The data were analyzed using SPSS 10.

Of the fifteen patients underwent TPE, six needed a second session. One died after the first session due to a cerebrovascular accident. Of the remaining 14 patients, 5 showed improvement in muscle power at least by one grade in one limb within 48 hours of completion of the first session of continuous TPE. The duration of ICU stay was 10 (median) days (range 4 -66 days). Nine patients required mechanical ventilation for median 15 days (range 4-50 days). The median RR was 16 per minute (range 14-25) before, and 22 per minute (range 14- 22) 48 hours after the procedure in non-ventilated patients. There were significant differences in urine output 48 hours ($p=0.003$) and 72hours ($p= 0.031$) after the completion of the first session of TPE. However, differences in blood pressure and PR were not significant. Mild reactions of hypersensitivity and bleeding from the puncture site were noted. These complications are usually attributed to the process of plasma exchange or vascular access.

Continuous TPE with plasma replacement improves the status of GBS patients by improving the muscle power. A transient polyuric state was observed 48 hours and 72 hours after TPE. The pulse rate and blood pressure remained static 48 hours after the procedure.

Financial assistance by Mr. David Swannell, Bhikku Sumedha (Halloluwa, Doolwala, Sri-Lanka), Mrs. Evelyne B urgisser & Bernhard B urgisser (Meienbreiten strasse 3, Ch-8153, Rmlanglzch, Switzerland) and Ms. Katherin Holden (1714, Oliver street, Santa Barbara, California) is acknowledged.