

# Assessing the Influence of Comfortable Nursing for Therapeutic Plasma Exchange Treatment of Severe Hepatitis Patient

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**Abstract:** Objective: To assess the Influence of Comfortable nursing for therapeutic plasma exchange treatment of severe hepatitis patient. Methods: 92 patients who were diagnosed as severe hepatitis from July 2017 to July 2018 were invited to join our study. We were randomly assigned the participants to the control group (n = 46) and the intervention group (n = 46), control group receive traditional nursing services and intervention group had additional comfortable care services. our researchers collected anxiety information and depression information by questionnaires which include Self-Rating Anxiety Scale (SAS) and Self-rating depression scale (SDS). Additionally, patient satisfaction and comfort level was collected by other questionnaires. Result: In the satisfaction research, intervention group had higher score of satisfaction assessment than that of control group [45 (97.8%) vs 39 (84.8%)]. In comfort level research, the intervention group had more 0 level assessment in our research result (n = 23). In result of SAS and SDS, the intervention group had greater improvement than that of control group in the SDS and SAS as the result of intervention group lowered scores even more. Conclusion: the comfortable care improve the outcome of therapeutic plasma exchange on severe hepatitis patient. In particular, the comfortable care greatly improve anxiety status and comfort level in the treatment process of therapeutic plasma exchange.

**Keywords:** Therapeutic Plasma Exchange, Severe Hepatitis, Comfortable Nursing

## 1. Introduction

Therapeutic plasma exchange (TPE) is a extracorporeal technique. Based on how it works, on the one hand, patient's plasma is separated from whole blood and removed. on the another hand, the cellular blood components and replacement fluid are returned to the patient. Both kinds of work are done simultaneously to have a therapeutic effect [1]. Plasmapheresis has been used as a synonym of TPE, but is usually applied for plasma donation, where no replacement fluid is needed. The separation of blood can be performed either by centrifugation or by filtration [2]. According to American Society for Apheresis guidelines, over 30 diseases may be treated with TPE [3]. In all of them, the rational for TPE is the removal of a pathological

substance in plasma that is responsible for the disease, i.e. autoantibodies, immune complexes, cryoglobulins, toxins or lipids [4]. Base on the reports, in immune-mediated diseases, immunosuppressive treatment should be given together with TPE in order to obtain a sustained response [5, 6]. TPE could be seen by many healthcare professionals as a non-selective unsophisticated procedure.

Base on some American's report, approximately 25–30% of Americans die within hospital settings [7, 8]. Death is unavoidable in the Emergency Department. Patients with serious illness increasingly have advance directives delineating wishes to limit medical care. Moreover, when Emergency Department care approximates futility, either imminently or in anticipated downstream hospital course,

emergency physicians have a responsibility to discuss Comfortable nursing as an alternate trajectory with patients and surrogates [9, 10]. Aim of this study is assess the Influence of Comfortable nursing for therapeutic plasma exchange treatment of severe hepatitis patient.

## 2. Methods

### 2.1. Participants Enrollment and Survey Methods

We invited 92 patients to join our study, they were diagnosed as severe hepatitis in medical institutions from July 2017 to July 2018. The participants' randomly assigned the participants to the two groups, that included control group ( $n = 46$ ) and the intervention group ( $n = 46$ ). Base on study require, the participants of two groups received different care service. For control group participants, they received traditional care services which were follow the standards required by the hospital. For intervention group participants, we provided the Comfortable nursing to them in the nursing process. In our study, the Comfortable nursing has 3 parts, that included pre-treatment care, in-treatment care and post-treatment care. In pre-treatment care part, we try to keep the patient informed of the treatment process so that their nervousness improved. In in-treatment care, we use music, speaking and equipment to make the patient relax. In post-treatment care part, we provided comfortable environment and professional psychological care services to patients, so their mental status were monitored and improved.

In addition, our researchers collected anxiety information and

depression information by questionnaires which include Self-Rating Anxiety Scale (SAS) and Self-rating depression scale (SDS) [11-13]. After the Comfortable nursing, the information of patient satisfaction and comfort level was collected by the questionnaires. All participants were volunteer to join our study and know all information of our study.

Their inclusion criteria were: (1) the patients were diagnosed as endocrine gastrointestinal tumours; (2) coagulation function was well; (3) Patients volunteered to participate in follow-up; Their withdraw criteria were: (1) patients had complications in treatment process; (2) The patient also had other stomach problems.

### 2.2. Statistical Analysis

Our data analyzer performed the statistical analysis by SPSS 22.0. The P value, t-test and chi-square test were associated with collection result were analyzed. Besides, the mean standard deviation for statistical description.

## 3. Result

The patient satisfaction research indicated that the intervention group had higher score of satisfaction assessment than that of control group [45 (97.8%) vs 39 (84.8%)]. In overall, most participants think their satisfaction assessment for nursing services is very well level, The participant number who assess very well level to the nursing services was more than that of control group (Table 1).

**Table 1.** Patient satisfaction [ $n$  (%)].

Projects	Satisfaction rate	Very well	good	normal	Bad
Intervention group ( $n = 46$ )	45 (97.8%)*	38*	4	3	1*
Control group ( $n = 46$ )	39 (84.8%)	25	5	9	7

\* $P < 0.05$ .

The comfort level is a important index for the Comfortable nursing. Base on the table 2, it shown total comfort status of participants, that most participants had qualified comfort services. In particular, the intervention group had more 0 level

assessment in our research result ( $n = 23$ ). On the other hand, the control group had more 1 level assessment in this result ( $n = 19$ ). So the intervention group had greater assessment in comfort level.

**Table 2.** Comfort level [ $n$  (%)].

Projects	Qualified comfort level	0 level	1 level	2 level	3 level
Intervention group ( $n = 46$ )	44 (95.7%)	23*	12	9	2
Control group ( $n = 46$ )	41 (89.1%)	13	19	11	5

\* $P < 0.05$ .

We did 2 research of SAS and SDS, we ask the participants finish the questionnaires when the nursing services beginning and ask they complete the the questionnaires again after the nursing services. Base on Table 3, it shown the change of anxiety status and depression status of participants from before the nursing to after the nursing, total scores were reduced that mean the anxiety status and depression status of participants were improved in the result. Furthermore, the intervention group had greater improvement than that of control group in the SDS and SAS as the result of intervention

group lowered scores even more.

**Table 3.** The score of anxiety and depression from SDS and SAS (Mean  $\pm$  SD).

Projects	Cases	SAS	SDS
Intervention BN	46	61.9 $\pm$ 7.9	59.5 $\pm$ 7.1
group ( $n = 46$ ) FN	46	50.8 $\pm$ 6.1	51.5 $\pm$ 5.7
Control group BN	46	62.5 $\pm$ 7.5	60.8 $\pm$ 6.8
( $n = 46$ ) FN	46	56.5 $\pm$ 6.9	55.6 $\pm$ 6.2

BN = before the nursing.

FN = after the nursing.

## 4. Discussion

Severe hepatitis is a lot of necrotic place causes even liver function failure and the serious liver function obstacle, department of clinical and serious liver disease type, the aetiological agent include virus infection, bacterium is infected, drug is poisoned, toxic substance is poisoned, alcohol is poisoned [14]. The severe hepatitis patients may had additional complications, such as Hepatic encephalopathy, hepatorenal syndrome, spontaneous peritonitis and sepsis. In addition, therapeutic plasma exchange ensures the removal of proteins, antibodies, and toxins causing clinical symptoms from the circulation. So therapeutic plasma exchange can provide a good treatment effect to severe hepatitis patient. Indeed, numerous adjunctive therapies (in addition to corticosteroids) have emerged in a number of in medical disciplines where TPE is or was an emergency treatment [15]. In American Society for Apheresis, the indications for therapeutic plasma exchange were stratified to 4 categories and graded from 1A to 2C levels of recommendation, depending on the quality of published reports [16]. In category I and 1A, therapeutic plasma exchange was accepted as the first-line therapy in a specific disorder and this was proven in a randomized-controlled trial. In the category IV and 2C mean that only experience from case series or observational studies were published.

Base on the research result, the comfortable care improve the outcome of the result of therapeutic plasma exchange in some aspects, such as patient satisfaction, patient comfort status and mental health. Overall, the anxiety status and comfort status of patient had great improvement, the intervention group patients reported the comfortable care had obvious effect to their feeling in in hospitalization. On the another hand, although another aspects had positive reports, our result shown that their improvement were slightly in the outcome. In satisfaction report, the participants' satisfaction assessment is mainly concentrated in very well level, most patients were very satisfied with traditional nursing services and additional comfortable care. Moreover, the intervention group had more very well level assessment than that of control group (38 vs 25). In comfort level report, the comfort status of intervention group patient is obviously better than that of control, that intervention group had 23 assessments of 0 level from participants and control group only had 13 assessments of 0 level from participants. Also, the result of assessments of 0 level was statistical significance. In the report of SAS and SDS, it shown the anxiety status and depression status of participants. Base on SAS and SDS result, the greatest change is score of anxiety with intervention group, which is from  $61.9 \pm 7.9$  to  $50.8 \pm 6.1$ .

## 5. Conclusion

In conclusion, the comfortable care improves the outcome of therapeutic plasma exchange on severe hepatitis patient. In particular, the comfortable care greatly improves anxiety status and comfort level in the treatment process of therapeutic

plasma exchange. Base on total research result, the comfortable care provide improvement to patient satisfaction, patient comfort status and mental health of patient. Even the influence of the comfortable care is greater than traditional nursing services. However, the Chinese hospital is difficult to add the comfortable care to traditional nursing services of hospital as the comfortable care let patients spend more expensive medicinal cost to their treatment, most patients are unwilling to pay higher medical fee. As TPE result in may bring pain and psychological pressure on unfamiliar things, most patients feel uncomfortable in the treatment process. So comfortable nursing services can manage comfort of patients so that make it easier for patients to accept this treatment method.

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