Faculty of Medicine

QUALITY OF LIFE IN DIALYSIS PATIENTS AND RECIPIENTS OF LIVING KIDNEY TRANSPLANT

Thesis

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List of Abbreviations

*** AV** : Arteriovenous.
*** AIDS** : Acquired Immune deficiency syndrome.
*** ATG** : Anti lymphocyte globulin.
*** ATN** : Acute tubular necrosis.
*** BP** : Blood pressure.
*** BP** : Bodily Pain
*** CAPD** : Continuous ambulatory peritoneal dialysis.
*** CBC** : Complete Blood count.
*** CCPD** : Continuous cyclic peritoneal dialysis.
*** CMV** : Cytomegalovirus.
*** CRF** : Chronic renal failure.
*** DIA-QOL**: Dialysis quality of life.
*** DM** : Diabetes mellitus.
*** Dx** : Dialysis.
*** EPO** : Erythropoietin.
*** ESRD** : End stage renal disease
*** GH** : General Health.
*** GN** : Glomerulonephritis.
*** HB** : Hemoglobin.
*** HD** : Hemodialysis.
*** HLA** : Human leucocyte antigen.
*** HRQOL** : Health related Quality of life.
*** HTN** : Hypertension.
*** IHD** : Ischemic Heart disease.
*** IL** : Interleukin.

*** KDQOL** : Kidney disease Quality of life.

*** KDQOL-SF**: Kidney disease Quality of life short form

*** KI** : Karnofsky Index.

*** LVH** : Left ventricular hypertrophy.

*** MCS** : Mental component summary.

*** MH** : Mental health

*** MHC** : Major histocompatability complex.

*** MPM** : Mycophenolate mofetil.

*** NIPD** : Nocturnal intermittent peritoneal dialysis.

*** OARS** : Older American research and service center.

*** PCS** : Physical component summary.

*** PD** : Peritoneal dialysis.

*** PF** : Physical function.

*** PTDM** : Post – Transplant diabetes mellitus.

*** RE** : Role / Emotional

*** RP** : Role / Physical.

*** RRT** : Renal replacement therapy.

*** SF** : Social function.

*** SF-36** : Short form 36 Item

*** SIP** : Sikness Impact profile.

*** TLC** : Total leucocytic count.

*** TTO** : Time trade – off

*** Tx** : Transplantation.

*** VT** : Vitality.

*** WHO** : World heath organization.

Conclusions and Recommendations

Conclusions:

1. QOL is a very valuable evaluation for Health profile.
2. In Hemodialysis patients, best QOL was to males, young ages, employed with high Hb level and no co-morbid conditions.
3. In CAPD patients best QOL was to employed young ages with no co-morbid conditions.
4. In renal transplanted patients best QOL was to young ages with high Hb level.

Recommendations:

1. ESRD females should proceed to transplantation or CAPD.
2. The presence of co-morbid conditions is an indicator to proceed to transplantation in patients with ESRD (HD, PD).
3. Improving Hb level in patients on HD and transplant.
4. Encouraging patients on HD and CAPD to Join employments.

Aim of the work

Is to study the difference in QOL between dialysis patients and recipients of living renal transplant using SF-36 Health survey.

Introduction

There are several methods for renal replacement therapy as hemodialysis, peritoneal dialysis and renal transplantation. ***(Pablo R,et al. 1998)***. Hemodialysis and peritoneal dialysis partially correct the symptoms experienced by the patient and provoke additional changes in the patients life style. These changes then can affect patient's Quality of life (QOL). Transplantation appears to give the best QOL for large group of patients ***(Fernando V., et al. 2001)***.

The assessment of Health related QOL may help identify an individual's risk of certain outcomes such as death and hospitalization ***(Tibblin G., et al. 1993)***. Translating the various aspects and components of QOL into quantitative values is a complex task ***(Gokal R. 1993)*** Many components of QOL cann't be observed directly, they are evaluated indirectly according to Item – Measurement theory ***(lord FM. 1980)***.

Out of many methods used to assess QOL, the SF-36 Questionnaire has become an extensively used generic measure throughout the world ***(Stansfeld SA., et al. 1997)***. It is considered the most valid, reliable, comprehensive, brief and potentially useful for individual patient applications ***(shield SF., et al 2004)***.

The Reliability, validity and sensitivity of the test have been shown in patients with chronic renal failure (CRF) and there is

growing experience using this Questionnaire to collect Information from renal patients ***(Khan IH, et al 2002)***.

The SF-36 is a generic Instrument that includes 36 Items assessing eight dimensions of functioning and well- being:

Physical function (PF), role limitations caused by physical health problems (RP), bodily pain (BP), general health perception (GH), energy, fatigue, vitality (VT), social function (SF), Role limitation caused by emotional problems (RE) and emotional well-being, mental health (MH). In each dimension, the respondent receives a score from 0 to 100. The higher the score, the better the health ***(Khan IH, et al 2002)***.

Dialysis

Hemdialysis:

Hemodialysis is a complex process performed with apparent simplicity. By attaching an extracorporeal circuit to a patient, the procedure of hemodialysis effectively removes uremic toxins and corrects acid – base disturbance in manner approximating some of the function of natural kidney ***(Gerald, 2001)*.**

Dialysis itself relies on the mass transfer across semipermeable membrane. The hemodialysis membrane separates the blood and dialysate compartments. Diffusion and ultrafiltration across the membrane are properties that are integral to the dialysis procedure ***(Brian, 2001)*.**

1. **Diffusion:** it is the movement of the solutes such as urea from blood compartment to the dialysate across a semipermeable membrane and the movement of substances such as calcium and acetate from the dialysate into the blood relying on a concentration gradient between the two compartments.
2. **Ultrafiltration:** it is the bulk movement of solvent and solutes, it is not dependant on the concentration gradient but the driving force is the hydrostatic pressure gradient across the dialysis membrane ***(Gerald, 2001)***.

Hemodialysis equipment consists of three components, the blood delivery system, the delivery system of the dialysate and the dialyzer itself. Blood is pumped to the dialyzer by a roller pump through lines with appropriate equipment to measure flow and pressure within the system. Blood flow should be approximately 300-450 ml/min. Negative hydrostatic pressure on the dialysate side of the system can be manipulated to achieve desirable fluid removal ***(levey et al., 1999)***.

Anticoagulation for dialysis is achieved primarily with heparin sodium. This may be given systemically as bolus dose, in smaller fractional doses or as regional heparinization, that is heparin counteracted by protamine ***(Hertel et al., 2000)*.**

Permanent vascular access for Hemodialysis delivers a flow adequate for dialysis prescription. Lasts for long time, and has a low complication rate. The arteriovenous (AV) fistula comes closest to satisfying these criteria because it has the best 5 years potency rate and during this period requires many fewer interventions than other access methods ***(Uldall, 1995)***. Prosthetic accesses (AV grafts) are constructed by the insertion of a subcutaneous tube in a straight, curved, or loop configuration between an extremity artery and a vein ***(kanterman, 1995)*.** Placement of a cuffed double lumen silicon elastomer catheter (e.g: Perm – cath device) or a pair of cuffed single lumen catheter

(e.g: tesio catheter) into an internal jugular vein for permanent access is also done in selected circumstances ***(Mclaughin, 1997)*.**

Complications during of Hemodialysis

1. **Hypotension:** Ocurrs in 25 to 50% of otherwise uncomplicated hemodialysis treatment. It is frequently caused by excessive fluid removal, inadequate refilling of blood compartment from the interstitial compartment, abnormalities of venous tone, autonomic neuropathy. ***(Larry and Baker, 1994)***. This can usually be corrected by the intravenous administration of saline.

   Two factors may contribute to the finding the fall in plasma osmolality due to rapid urea loss which promotes extracellular water movement into the cells, and the transfer of acetate into the blood stream at a rate that exceeds its ability to be metabolized. This so called acetate intolerance appears to be mediated by both a reduction in systemic vascular resistance and a decline in myocardial contractility. It can be avoided by using a bicarbonate containing dialysate rather than acetate ***(Bregman et al, 2000)*.**