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ETIOLOGY OF END-STAGE RENAL DISEASE, PREVENTABLE CAUSES AND THE ROLE OF NURSES

Nilgun AKSOY

Akdeniz University, Turkey

Abstract

The End-Stage Renal Disease (ESRD) is a prevalent disease in which the functions of kidneys are progressively and irreversibly lost, and a serious public health problem that affects all the organs and the systems, threatens life and considerably leads to loss of labor force and life quality as a consequence of its frequency, complicated treatments and high financial expenses. ESRD both affects the life quality and causes morbidity and mortality at high rates. The existing evidences indicate that the adverse results of Chronic Renal Disease can be prevented or delayed with early diagnosis and treatment. The distribution of causes leading to ESRD vary from country to country as well as race and gender. Climate, socioeconomic conditions, cultural differences and environmental factors play a significant role in the development of ESRD. By determining these differences and reducing the risk factors likely to occur at prenatal stage, renal failure developing until the stage of organ transplantation could be prevented, and additionally contributions will be made to both the public health and in the country's economy. However, the development frequencies, the causes, the relationship related to sex and age, the accompanying clinic problems, the treatment methods and the protective methods for these diseases are not known well in Turkey. Determining the factors causing ESRD, and early diagnosis of the preventable and treatable disorders are significant in order not to encounter any recurrence after kidney transplantation stage. In countries like Turkey, where the health costs are limited, knowing about the etiological causes and the frequency of ESRD and treating these diseases from the moment of its diagnosis are considered to be an effective method in slowing down the ESRD process and decreasing the costs. The nurses can have individuals at risk group adopt and apply the healthy life style changes to provide protection from chronic renal disease at a high rate. To prepare strategies aimed at preventing ESRD, the frequency and prevalence of which is increasing gradually, it is important to determine the changeable risk factors related to the development of ESRD.

Keywords: End Stage Renal Disease, Risk Factors, The Role Of Nurses

1. Introduction

End Stage Renal Disease (ESRD) is a syndrome characterised by the progressive and incurable loss of the nephrons as a result of various diseases (Akkaya ve ark., 2012). End Stage Renal Disease, which influences the whole organ and systems, threatens the life and causes the loss of labor force and living quality at a considerable extent, is a serious health problem by reason of the frequency , complicated treatment and high treatment costs (http://www.tsn.org.tr/folders/file/tsn_registry_2011.pdf, Eriřim tarihi: 13 Mart 2013).

According to the data gathered by the Turkish Nephrology Association , End Term Renal Failure point prevalence requiring renal replacement treatment is 816 per million population in 2012.

Table 1. Chronicle Renal Failure Stages

Stage	Definition	GFR (mL/dk/1.73 m ²)
Stage 1	Renal damage with normal GFS	≥90
Stage 2	Renal damage with low GFS	60–89
Stage 3	Middle Level GFS	30-59
Stage 4	Extreme GFS	15-29
Stage5	ETRF	<15 (or dialysis)

Kaynak: Levey AS, Atkins R, Coresh J, Cohen EP, Collins AJ, Eckardt KU, Nahas ME, Jaber BL, Jadoul M, Levin A, Powe NR, Rossert J, Wheeler DC, Lameire N, Eknoyan G. Chronic kidney disease as a global public health problem: approaches and initiatives- a position statement from kidney disease improving global outcomes. Kidney Int. 2007;72:247–259.

2. Epidemiology of End Stage Renal Disease Around The World and in Turkey

End Stage Renal Disease is a em around the world 110.000 patients were started ETRF treatment in 2007 in the USA (http://www.cdc.gov/diabetes/pubs/pdf/kidney_factsheet.pdf, Eriřim Tarihi: 10 Ocak 2013). It is estimated that ESRD patients will be more than 780.000 by the year 2020 in American, Asian and European countries (Haras, 2008).

According to the international comperative results of United States Renal Data System (USRDS) atlas in 2013 , it is reported that the disease incident shows a tendency to increase in some countries, to remain constant in others and to decelerate in other countries.It is informed that while the countries which has the highest values with regard to prevalence in 2011 are respectively ; Japan (2309) , USA (1924), Portugal (1662) , Singapore (1661) , the countries which has the highest ETRF incidence in 2013 are respectively ; Mexico (527 per million population) , USA (362 per million population) and Japan (295 per million population) (USRDS, 2013).

According to the data gathered by Turkish Nephrology Association, there are approximately 70.000 dialysed and transplanted patients in Turkey (http://www.tsn.org.tr/folders/file/tsn_registry_2011.pdf, Erişim tarihi: 12 Ekim 2013).

3. Etiology of End Stage Renal Disease

The diagnosis can not be confirmed at most of the ESRD patients and these patients apply with belittled kidneys, uraemic symptom and findings. At such conditions, biopsy of kidney can not be performed, it is useless and it can be harmful (Feest, 2007).

According to the data of USRDS, it is reported that the proportion of factors contributing the etiology of chronicle renal disease at the hemodialysis applied patients are ; Diabetes mellitus at the %44.8 , hypertension at the %29 , glomerulonefrit at the %9,1 , polycystic renal disease at the %2,4 and other urological reasons at the %1,7 and ESRD cases emerging depending on other reasons (USRDS, 2012).

Table 2. Reasons of Chronicle Renal Failure

Reasons of Chronicle Renal Failure

Diyabetic glomerulosclerosis

Hipertansive nephrosclerosis

Glomerular disease

Glomerulonephritis

Amyloidosis Light Chain Disease

Systemic Lupus Erythematosus, Wegener Granulomatosis

Tubulo-interstitial disease

Back flows nephropathy (Chronic pyelonephritis)

Analgesic nephropathy

Embolisation nephropathies (Renal calculus, hyperplasia of prostate)

Myeloma kidney

Vascular disease

Scleroderma

Vasculitis

Renovascular renal failure (ischemic nephropathy)

Atheroembolic kidney disease

Cystic diseases

Autosomal dominant polycystic kidney disease

Medullary cystic kidney disease

Kaynak: *Chronic Renal Failure. In: Dolar E, Ed. Internal Diseases. Nobel Medical Bookstores Ltd. Sti., Istanbul; 2005, s: 304-310.*

4. Risk Factors Simplifying the Progress of Chronic Kidney Disease to End Term Renal Failure

There are some risk factors simplifying the emergence of chronic kidney disease and the progress to the End Term Renal Failure in the parenchyma diseases of the kidney. These are shown in Table 3 (Mc Clellan and Flanders, 2003).

Table 3. Factors affecting the emergence and progress of chronic kidney disease

Factors affecting the emergence and progress of chronic kidney disease	
Eld	Oxidative stress
Ethnicity and Race	Hyperlipidemia
Sex	Insulin resistance
Low socioeconomic level	Anemia
Smoking	Proteinuria
Alcohol addiction	High blood pressure
Family background	Inadequate medical care
Analgesic addiction	Poverty
Narcotic addiction	Hyperlipidemia
Exposure to lead and other heavy metals	Insulin resistance

Kaynak: Mc Clellan WM. and Flanders WD. Risk Factors for Progressive Chronic Kidney Disease. Journal of the American Society of Nephrology. 2003;14: 65-70.

5. The Importance of Matter with Regard to Nursery

It is extremely important to educate the society in the direction of healthy life changes in order to both diagnose the disease at an early stage thanks to screen tests for the individual at high risk group and to prevent the progress of the disease and minimise the risk factors and the progress of kidney disease. The highest risk groups for patients are the ones with Diabetes mellitus, hypertension, cardiac diseases, family background and elders. Obesity, smoking, renal calculus, reiterated urinary infections, frequent use of analgesic, collagen tissue disease and low birth weight can be counted as the other risk factors (http://www.tsn.org.tr/pdf/bobrek_sagligimiz.pdf, Erişim tarihi: 24 Ekim 2013).

Nurses will enable the individuals at risk group to be protected from chronic kidney disease at a large extent by infusing healthy life changes and getting them to apply these changes. From this point of view, nurses should take responsibility in protective medical services such as the importance of regular exercise, healthy nutrition and keeping the ideal weight, minimising the salt usage, adequate liquid consumption, smoking, excessive alcohol consumption, avoiding analgesic medicine, providing regular blood pressure and glucose checks in order to increase the health quality of the society.

Reference

- Akkaya M, Erdogan E, Sag S, Ari H, Turker Y, Yilmaz M. The effect of hemodialysis on right ventricular functions in patients with end-stage renal failure. *The Anatolian Journal of Cardiology*. 2012;12: 5-10.
- Feest T. Epidemiology and causes of chronic renal failure. *Medicine*. 2007;35: 438-441.
- Haras MS. Planning for a good death: A neglected but essential part of ESRD care. *Nephrol Nurs J*. 2008;35: 451-483.
- Levey AS, Atkins R, Coresh J, Cohen EP, Collins AJ, Eckardt KU, Nahas ME, Jaber BL, Jadoul M, Levin A, Powe NR, Rossert J, Wheeler DC, Lameire N, Eknoyan G. Chronic kidney disease as a global public health problem: approaches and initiatives- a position statement from kidney disease improving global outcomes. *Kidney Int*. 2007;72:247–259.
- Mc Clellan WM. and FlandersWD. Risk Factors for Progressive Chronic Kidney Disease. *Journal of the American Society of Nephrology*. 2003;14: 65-70.
- Selcuk Y. Chronic Renal Failure. In: Dolar E, Ed. *Internal Diseases*. Nobel Medical Bookstores Ltd. Sti., Istanbul; 2005, s: 304-310.
- USRDS 2012 Annual Data Report. ESRD: Incidence, Prevalance, Patient characteristics and modality. Vol 2. Chapter 1. p.225.
- USRDS 2013 Annual Data Report. ESRD: International comparisons. Vol 2. Chapter 1. p.338.