S P E C I A L P A P E R

The Importance of the Early Sending to the Nephrology Team within the Health Promotion

Michael Kourakos, RN, MSc, PhD (c)
Psychiatric Hospital of Attica "Dafni", Athens, Greece

Aikaterini Toska, RN, MSc, PhD (c)
General Hospital of Korinthos, Korinthos, Greece

Maria Rekleiti, RN, MSc
General Hospital of Korinthos, Korinthos, Greece

Maria Saridi, RN, MSc, PhD (c)
General Hospital of Korinthos, Korinthos, Greece

Correspondence: Maria Rekleiti RN, MSc, Korinthos General Hospital, Greece
27 Nikomidias street, GR-20100 Korinthos, Greece, e-mail: mrekliti@gmail.com

Abstract

Introduction: The kidney disease is a common situation, it is accompanied by a significant morbidity/mortality and despite the development of substitution renal functions methods (SRFM) and transplantation, the prognosis is unfavorable.
Aim: The aim of the present review is the assessment of the necessity for sending to the Nephrology Team (NT) in the early stage of RF.
Results: Lately, it has been documented that the timely sending to the NT, can significantly improve the survival of patient with kidney disease. On the contrary, the delayed sending has as a result not only the non timely measure uptake for the delay of the loss of renal function, but also the later therapy for the uremic complications.
According to Eadington (1996) the sending is considered as a delayed, when the provision of healthcare services could be improved with the timely contact with the Nephrology Services.
Both in Europe and North America, the delayed sending comes up to the 30-40% of people who are inducted in dialysis.
The benefit from the early sending to the NT, it is important and consists of the regimens for the delay of the kidney disease development,, timely information for the patient about the SRFM, timely vascular preparation or other kind of accessibility, non-urgent dialysis initiation, patients' training, lower financial cost, less hospitalization days, transplantation preparation and lower mortality.
Conclusions: Optimal sending is the timely sending since it makes possible the diagnosis, the delay of the development of KD and the prevention of the complications. Furthermore, gives time for the appropriate medical and psychological preparation of the patient and the initiation of dialysis in the appropriate time.
The measures which should be adopted include the improvement training and communication of healthcare workers and services interference, as well as the enactment of guidelines.

Key words: kidney disease, prevention, health promotion, communication, quality of life.

Introduction

The chronic renal failure is not an uncommon situation in nowadays. This is characterized from a significant morbidity and mortality, especially in its late stages (Coresh J et al, 2003; John R et al, 2004). Despite the development of the dialysis and transplantation, the prognosis is unfavorable with a year rate of mortality over 20%. (De Vecchi AF et al, 1999). The last twenty years it has been documented that the early and appropriate sending to a nephrology team (NT), can significantly improve the survival of the patients who develop renal disease. On the contrary, the delayed sending has as a result not only the non-uptake of timely measures for the prevention of the loss of renal function, but also the delayed treatment of uremic complications. The final result is the dramatic reduction of the survival of these patients in the late stage of chronic renal failure (CRF) (WautersJP et al, 2005, Theofilou 2011, Theofilou 2011a).

In order to be determined chronically the early sending to the NT, should be assessed the following: The stages of the CRF, the incidence of CRF, the benefit for the patients from the early sending and the financial benefit.

A. Stages of the CRF

According to the international guidelines (Levey AS et al, 2005) the CRF is determined with the presence of renal damage for period greater or equal to 3 months structural or functional renal disorders, with or without reduced glomerular filtration and with a rate of glomerular filtration (GFR) < 60ml/min/1,73m^2 for a period greater or equal to 3 months with or without other findings of kidneys' damage. The stages are divided to:

First: Renal damage with normal or increased GFR (≥90ml/min/1,73m^2)

Second: Renal damage with mild damage of GFR (60-89ml/min/1,73m^2)

Third: Mild reduction of GFR (30-59 ml/min/1,73m^2)

Fourth: Serious damage GFR (15-29 ml/min/1,73m^2)

Fifth: Renal failure (<15 ml/min/1,73m^{2}or external renal clearance).

B. CRF incidence

According to surveys in USA, the 9, 74% of men and the 1,78% of women appears high levels of creatinine serum. The higher creatinin levels also are connected positively with the age and the male sex. (Locatelli F et al, 2003).

C. Benefit for patients from the early sending to the NT

The benefit from the early sending to the NT, is very important and includes the Implementation of remedy for the delay of renal damage (Thilly N et al, 2006).

a. Timely information of the patient about the substitution methods of renal function,

b. Timely vascular preparation or other access

c. Non urgent (acute) entry of extra renal clearance (dialysis) for the better treatment of uremic disorder (Thilly N et al, 2006; Obrador GT, PereiraBJ, 1998).

d. Patient training for the facing of the disease (Obrador GT & Pereira BJ, 1998).

e. Lower financial cost (Holley JL, 1998).

f. Shorter time of hospitalization (limited morbidity) (Roderick P et al, 2002).

g. Preparation for transplantation

h. Lower mortality (Roderick P et al, 2002; Kazmi W et al, 2005).

According to the study of Jungers et all in France , the five years survival was significantly lower for the nephropathies who had been sent to the NT, in a period under the six months (57.8±4.2%) or 6-36 months (65.3±3.9%) before the dialysis initiation , in comparison to these who had been sent earlier , in a period of 3-6 years (77.1±3.7% p=0.01) or in a period >6 years (65.3±3.9% p=<0.001) before the aimodialysis initiation. (Jungers P et al, 2001).The present data show that the patients with stage 2 CRF (GFR 60-90ml/min/1,73m^2) can remain without specialized nephrological care, without family doctor's follow up, having in mind that they are at high risk of cardiovascular disease ,it is necessary the immediate handling of dangers (Huisman, R, 2004).

However, when the GFR is<60ml/min/1,73m, the patient should be sent to the team in order to prevent further deterioration of the renal

function and for timely treatment of the uremic disorders.

D. Financial benefit from the timely sending

Data of Obrador & Pereirai (1998), show that the financial charge from the advanced diagnostic and therapeutic interventions, will be over covered from the delay of intact ion in blood clearance, the reduction of the morbidity and hospitalization, mainly in the first years of blood clearance of dialysis. This morbidity results from the increased incidence of uremic complications and other serious problem (unjustable artery blood pressure and the onset of pulmonary oedema). Furthermore, the early, timely development of arteriovenous communication has as a result the avoid of the use of temporary catheter and the decrease of the morbidity. Therefore, the final balance is for the lower budget (Obrador GT & Pereira BJ, 1998).

Definition of the delay sending

According to Eadington (1996) the sending of a patient to the NT, is considered delayed when the provision of healthcare services could be improved with the timely contact with the Nephrological Services. The definition of the delayed sending to NT varies from 3 to 6 months before the necessity of induction in outer kidney clearance (Wauters J et al, 2005).

Epidemiological data

In European Countries and Countries of North America the incidence of the delayed sending consists the 30-64% of the patients who are inducted for dialysis (Wauters J et al, 2005). This frequency doesn't show a valuable change in last 20 years. In nowadays, the 1/3 of the patients who are placed in a chronic dialysis schedule are in a high risk group due to the delayed sending, both in Europe and in America (Huisman R, 2004).

Causes of the delayed sending

The causes of the delayed sending to a nephrologist can be distinguished to causes related with the disease the patient, the team of health provision and the Health System of each country (Wauters J et al, 2005; Obialo CI et al, 2005). Particularly:

Causes related to the disease, such as the Inevitable delayed sending due to no inverted Acute Renal failure (ARF) or ARF in underlying chronic renal disease and the asymptomatic renal disease, displayed only in late stage.

Causes related to patient, as are psychological factors concerned the patient, negative attitude concerning the seek of help until the time they are symptomatic, as do patients in other chronic diseases, the lack of understanding of the severity of their situation, as well as fear about the external clearance (Koffas, 2011). Important roles also play other Co- existent conditions (older age, cardiovascular disease), the distance from the HealthCare Services and Social economic features: alcoholic, drug users, homeless. Unemployed (Obialo CI et al, 2005).

Causes related to Team of Health care provision.

This may involve the following:

- Non sending of the patient due to age or co-morbidity.
- Absence of the estimation from the therapists about the benefit results from the timely nephrological care.
- Bad communication between doctor and NT.
- Final Delay of the regular appointment for nephrological examination.
- No sufficient time or inadequate contact with the patient and the relatives. (Understanding of the nature of the disease and the therapeutic choices).
- Inadequate number of nephrological Services.
- Distance from the healing Center.
- Absence of therapeutics' training as well as absence of the right guides about the time or the indications of patients' with renal worsen disease sending survive) fact that may give a wrong impression of the useless of the intervention.

Causes related to Health System of each country

This may involve the limited accessibility of patients in the accurate system in developing countries, the Structure and policy of the health

system of the developed countries and the low social economic status, limited accessibility to therapeutic Centers .

According to Van Biesen and al, (1998) the general doctors are sending the patients more early to the NT. On the contrary, the intensive care doctors and the cardiologists were delayed more to send a patient with a renal problem. The same research team found that the following specialties are responsible for the delayed sending with the following rates: general doctors 20%, medical doctors 60%, urologists 25% and cardiologists 40% (Van Biesen W et al, 1998). In research of Jungers et al, (2001) was found that the non- timely sending in a percentage of 18% is due to the absence of symptoms of uremia , 40% to the iatrogenic causes, and 42% to non- compliance of the patients with the guides (Jungers P et al, 2001).

Aggravation of the development of the renal damage

Although, many times the causes leading to the HRF is possible to be healed, it has been observed that the renal disease deterioration could be due to secondary factors also, which are not connected with the initial disease (Yu HT, 2003), as the high albuminaimia , high blood pressure, black race , low levels of HDL cholesterol, diabetes mellitus, smoking, metabolic syndrome, analgesics and obesity (Hunsicker LG et al, 1997). The interventions for the aggravation of the development of the CRF in short are (Pereira B & Brian JG, 2000):

1. Use of blockers of conversional enzyme of angiotensin and the receptors of angiotensin II for the facing of the hypertension in non- diabetic patients with CRF (Ruggeneti P et al, 1999).
2. Adjustment of artery blood pressure. It is known that the bad adjustment of the blood pressure accelerates the rate declination of the renal function and increases significantly the incidence of the late stage renal disease development (Kshirsagar AV et al, 2000; Locatelli F et al, 2000).
3. Prevention of cardiovascular disease with appropriate anti-hypertensive regimen, correction of anemia, limitation of sodium- and liquids volume, correction of calcium-
4. phosphorus, secession of smoking and possible administration of statins, anti-inflammatory and anti-oxidant agents.
5. Sufficient regulation of blood glucose for the inhibition of diabetic renal disease.
6. It is doubting by many studies that the limitation of protein intake can cause the limitation of the renal damage deterioration or better control of metabolic profile.
7. Other interventions. An important factor of risk development of the renal damage is smoking, through the increased sympathetic activity, the oxidant stress and the function disorder of proximal tubule. (Locatelli F et al, 2002).

Suggestions for the delayed sending prevention

Optimal sending is the timely sending. It allows the early diagnostic access, aggravates the development of the renal dysfunction and prevents the uremic complications development. Furthermore, it gives the time for appropriate medical and psychological preparation for the patient and entry of outer kidney dialysis in the right time (Ritz E, 2003).

The measures should be taken are the improvement of training and communication within medical community the implementation of medical guidelines and the Interference between doctors and health systems.

The scheduled which is proposed for the patient sending from the family doctor to NT, is:

a. When the diagnostic procedure gives the suspicion of renal disease in order to be confirmed the diagnosis, the prognosis about the general condition and renal function and the therapeutic frame of following up includes, therapy of the underlying disease,
b. prevention of uremic disorders and severe control of artery blood pressure (target 120/70mmHg), osteodystrophy and proteinuria.
c. Once in a time, when the renal disease has been diagnosed and has not a fast deterioration to the last stage, in order to be verified the possible therapy for the underlying disease and prevention of the uremic complications.

d. When the calculated GFR is decreased more than 20%, for diagnosis of possible underlying factor which disrupt the renal function, for the revaluation of the therapy for the underlying disease, for revaluation of prevention and therapy of uremic complications, the dietetic consultation and the protection of hands for the future vascular accessibility.
e. When the calculated GFR is <25-30ml/min, the nephrologist should uptake the patient care and full patient information about the sort of dialysis must be given. Also, there is need for reparation for vascular or other accessibility and schedule for the initiation of dialysis must be prepared.

Conclusions

In nowadays, is the most documented that the timely and regular nephrological follow up, in pre-terminal stage of CRF, is accomplished by a decreased morbidity, decreased short term mortality and increased long term survival in dialysis and lower financial cost. Nevertheless, the epidemiological data show that the delayed sending has not been reduced in the last years. Despite the fact that for the patients' sending to NT there are not barriers, in most countries there is no information about the potential benefits from it.

Since the CRF incidence is continually increasing, is necessary the financial cost of the control programs for the high risk groups (older people, people with diabetes or hypertension) to be estimated. The developments of new health care models as well as the combined care from nephrologists and other specialties are also very vital and important.

Giving emphasis to the early detection of the kidney disease, the timely sending of patients with CRF for regular follow up, it consists of the most urgent challenge for the Nephrology Team.

In nowadays the fact that the delayed sending leads to the "loss of chance for the patient and loss of money for the society" should not be ignored (Jungers P et al, 2001).

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