

Research Findings in IJKD, October 2008

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The ultimate goal of scientific research, in which the editors of the *Iranian Journal of Kidney Diseases (IJKD)* believe, is to improve the quality of life of people and to keep them from illnesses. This has emerged opening a new section in the journal, namely *IJKD for People*, for providing directly the people with a summary of what is published in this journal and describing in a simple language entities related to the kidney, and its diseases. The editors hope that this initiation will be in concert with a turning point in developing countries towards a more patient-oriented and humanities approach in the medical journalism. Herein, some of the studies presented in this issue of the journal are briefly described in order to promote knowledge of the people on the current advances in nephrology. The Persian translation of this article will be available, too, from www.ijkd.org.

Important Note for Readers. The findings in medical papers are usually not directly applicable and patients should consult their physicians before any utilization of the results of medical studies.

HOPES FOR THE FUTURE OF PERITONEAL DIALYSIS

After nearly a century from the first application of peritoneal dialysis, Dr Oreopoulos (a pioneering nephrologist in Toronto Western Hospital who directs the Peritoneal Dialysis Program) and his colleagues have reviewed the "past, present, and future" of this dialysis modality. Some diseases that affect the kidney can cause their complete failure in a short period or in the long run. To compensate the lack of the kidneys' functions, 3 options do exist: hemodialysis, peritoneal dialysis, and kidney transplant. Since kidney transplant is usually not possible immediately, many patients around the world have to be treated with one of the dialysis options.

What is Dialysis?

Dialysis is a procedure of separating the excessive liquid and waste substances from the blood. This is indeed purification of the blood that is done a

substitute of the function of the kidneys.

What is Peritoneal Dialysis?

The peritoneum is a membrane lining the cavity of the abdomen that covers the bowel and other organs in the abdomen. Peritoneal dialysis is the process of instilling a fluid into the cavity within the peritoneum and evacuating the fluid after a while. The blood that is circulating in the abdominal organs and the peritoneum will be in indirect touch with the instilled fluid and the excessive water of the blood and its waste substances will pass through the blood vessels' walls and the peritoneum and excreted with the fluid. This procedure can be done by the patients themselves and in their home.

What is Hemodialysis?

Dialysis can be done by a machine that is connected to the body of the patient. Its special tubes are connected to the vessels through the skin and the blood will go out of the body into the

machine to be purified by some filters. Dialysis machines are set up in the hospital and the patients should go to the hospital 2 or 3 times a week to get connected to the machine for 4 hours.

What Do Dr Oreopoulos and His Team Say?

Their review of the current knowledge shows that (1) one in 10 patients with kidney failure undergo peritoneal dialysis around the world; (2) at least during the first few years, peritoneal dialysis provides better quality of life and chance of surviving the disease; (3) especially in countries that locally manufacture peritoneal dialysis instruments, this modality does not have excessive costs and even can be cheaper when compared with hemodialysis; (4) the risk of hepatitis infection is lower by peritoneal dialysis; and (5) technology is making this modality safer and easier.

In Iran, as Dr Mahdavi-Mazdeh and her colleagues reported (IJKD, January 2008, page 11), about 6% of patients who have not received a kidney transplant are on peritoneal dialysis.

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KIDNEY FAILURE: A THREAT TO THE PUBLIC HEALTH CARE SYSTEM

When the kidneys start to lose their function, it takes a long time for the symptoms of the disease to appear. At this stage (appearance of symptoms), the patients have lost largely their function of the kidneys. Several diseases cause this gradual damage of the kidneys. The most important of them are diabetes, increased blood pressure, and kidney infections. Aging is also another major threat to the kidneys. So, we can guess that a large portion of our population are at risk. Dr Nafar and his colleagues do concern about this great threat and see it as a major health problem in Iran. They have tried to estimate the number of patients who do not know that their kidneys are getting impaired and the years they might lose because of disability and early death. In 2004, as they estimated, there were about 700 000 individuals in Iran that had varying stages of kidney disease, and the unfortunate point is that most of them do not know their problem, just because they have no symptoms! Their study estimated that more than one million years have been lost because of kidney disease in 2004.

These estimates make it urgent to educate people and inform them of the diseases that may impair

their kidneys and ways to prevent this disastrous condition. Another crucial measure is to expand the dialysis facilities and kidney transplant program to be able to provide service to the increasing number of the patients with kidney failure. And all these are the responsibilities of the physicians and the policy makes in the healthcare system. On the cover of this issue of IJKD, the exploding figures are clearly illustrated!

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THE CHALLENGE: DIAGNOSIS OF KIDNEY INFECTION IN CHILDREN

Infection of the kidneys is a common disease in children, especially in girls. They should be treated properly as soon as possible, but the challenge is the diagnosis. Symptoms of the disease are different from those in adults and younger children cannot simply say, "I have pain in my kidneys." Of course, diagnosis of kidney infection in children is possible, but usually not with the help of simple tests. That is why researchers are trying to find a good and easy indicator to detect kidney infection. Dr Mohkam and her colleagues in Tehran, Iran, have tested a protein in the urine called interleukin-8 that has a role in the process of inflammation in the body. They found that in case of involvement of the kidneys with bacteria, this protein is excreted in the urine more than usual and it even increases after the treatment. A series of such markers of infections are the subject of several research projects in the world. Their usefulness, however, is yet to be confirmed.

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BACTERIA ARE RESISTING

Treatment of urinary tract infections is not a big problem these days, thanks to the invention of various kinds of antibiotics. However, bacteria have the power to adapt themselves with these antibiotics. Some of the known bacteria that frequently cause urinary tract infection have had mutations in their genes that make them resistant to the new generations of antibiotics. As a result, physicians should keep themselves updated about the behavior of the bacteria and know which antibiotics may no longer be useful. This needs local research, because in each region, the common

bacteria may differ from those in other regions. Dr Aminzadeh and her team tested the resistance of 2 common bacteria in the urine of the patients in Tehran. They found that half of them were resistant to at least one of the most commonly used drugs in Iran.

This finding can help the physicians choose better antibiotics when they are going to treat a patient with urinary tract infection. On the other hand, resistance to antibiotics is increasingly restricting the treatment options, and that is the cause of excessive and improper use of the antibiotics with which we are all familiar!

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KIDNEY TRANSPLANT PATIENTS: NO FEAR OF LATER ADMISSIONS TO HOSPITAL

One thing that might be neglected by transplant physicians is the fears of their patients, especially after transplantation. Each time they need to be hospitalized, they have to face the threatened status of the kidney they have received. Rehospitalization is a usual event in these patients because of a series of problems that they may encounter. The paper by Dr Nourbala and his colleagues published in this issue of the IJKD is an interesting article; first, it convinces kidney transplant patients that further

admissions to hospital does not necessarily mean that their new kidney is in danger. Second, it encourages transplant physicians to reassure their patients of their health and their good chance of living with their kidney transplant even if they have to be hospitalized for some problems. The authors showed that their patients who were hospitalized again after their transplant had almost similar change of living with their new kidney.

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FOLLOWING WHAT PHYSICIANS RECOMMEND AFTER TRANSPLANT

A paper by a team of Egyptian transplant experts is published in the IJKD that focuses on the extent their kidney transplant patients comply with the medical and health care recommendations. In some aspects, like following the instructions about taking the special drugs they have to use, the results were promising. But in many others, the patients were not compliant enough. Some of these aspects were exercise, prevention of infections, seeking sexual consultation, and prevention of cancer. Performing such investigations in Iran, with a large number of transplanted patients, is a critical need.

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Errata

In volume 2, number 3 of the *Iranian Journal of Kidney Diseases*, the following errors occurred:

On page 123, column 2, line 2 from the bottom, and on page 124, footnote of Table 2, the word *adopted* should have read *adapted*.

On page 167, title of the letter to the editor, *Among* should have read *in*. The same error has occurred in the Table of Contents of the journal.

The editors regret the above errors.