

# Good essay on chronic kidney disease

[Technology](#), [Development](#)



## **Clinical presentation**

Chronic Kidney Disease (CKD) is the gradual loss of kidney function over time. It is also referred to as chronic kidney failure. It is a condition that develops when the kidney malfunctions and fails to perform its major functions of removing metabolic waste and excess water. Metabolic wastes filtered from the blood are excreted in the urine and include electrolytes and excess fluids (Inzucchi et al., 2012). When these metabolic wastes build up in the body they cause serious complications that makes one feel sick with complications such as nerve damage, high blood pressure and anemia. The major cause of CKD is diabetes which happens when the blood sugar level is too high causing damage to many organs in the body including the kidney and the heart, as well as the nerves and eyes. Other causes include glomerulonephritis. This consists of diseases that cause inflammation and damage to kidney's filtering units. CKD can also results from inherited diseases which cause large cyst formation in the kidneys and damages the surrounding tissues. CKD can develop in people who have a family history of kidney failure. It also comes with old age (Choi & Lee, 2012).

Population groups that have high rates of diabetes have a high risk of the disease such as the African American, Asians, Hispanic Americans and American Indians among others. Physician's knowledge of ethnic group helps in diagnosis and determining the right treatment to the patients of CKD (Gupta et al., 2005). The signs and symptoms of CKD develop over time as the kidney gets damaged gradually. When the kidney is fully nonfunctional, an individual starts feeling nausea and starts vomiting (Choi & Lee, 2012).

The patient begins to develop muscle twitches and cramps due to deposition

of metabolic waste in the muscles. The ankles and feet swell and the patient now develop loss of appetite, hiccups and starts experiencing sleeping problems. Due to ions and electrolyte imbalance changes in urine output become evident. When the excess fluids are not eliminated they accumulate in the organs such as around the lining of the heart causing chest pains (Inzucchi et al., 2012). The lungs also get filled with the toxic fluids and the breathing system becomes clogged leading to breathing problems. Consequently, the patient experiences decreased mental sharpness since the blood contains impurities thus the brain gets affected due to lack of replenishment. The patient experiences fatigue and general body weakness and high blood pressure develop which is difficult to control.

## **Diagnosis process**

The physician can determine the functionality of the kidney by measuring the glomerular filtration rate. The physician calculate blood creatinine, age , race gender and other factors that determines GFR . At early stages patients with CKD have Glomerular Filtration Rate (GFR)greater than 30MI/min/1. 73m2 and shows negative results after diagnosis (Choi & Lee, 2012). They do not experience significant disturbances in body water, electrolyte balance or any visible metabolic imbalances. After sometime the patients experiences some disturbances that become clinically evident when the GFR becomes less than 30MI/min/1. 73m2 (Choi & Lee, 2012). Most of the signs and symptoms are evident. The final stage is marked by major signs and symptom that show the effect of accumulated toxic waste in the system. These include fatigue, lean body mass loss and muscle wearing out and

general weakness as well generally reduced quality of life (Inzucchi et al., 2012).

The physician can also perform ultra sound test or CT scan to ultrasound test of the abdomen to determine the size of kidneys and any signs of swelling. The health care provider may also physically check for any abnormal sounds from the heart and lungs in the chest due to fluids (Inzucchi et al., 2012). CT scan can be used to test for tumors and kidney stone. Among these two methods, the most accurate is using the GFR in which urinalysis shows changes in urine content. The changes may appear in a range of six to ten months or more before symptoms appear (Gupta et al., 2005). This is now where the patient's history becomes an important in diagnosis of span of time from development of first signs and symptoms. Detailed patient history that covers their family history as well as their medical history could give a clue as to the potential trigger effects, the patient's response to medication and the overall development of the illness (Greer, Crews, & Boulware, 2012).. Similarly, a detailed family history could provide a clue as to whether the illness has any genetic correlation and thus help determine the elements of the care plan in response to management of the illness (Choi & Lee, 2012).

## **Treatment and potential implications**

CKD is treated depending on the stage of development it has reached. Major treatment involves change in lifestyles. At some levels CKD is non curable and thus becomes important to treat the complications such as blood pressure, anemia and lowering cholesterol levels. This helps slow further

damage to the kidney. The patient is administered with Angiotensin-converting enzyme (ACE) inhibitors which help to keep the blood pressure at normal levels at or below 130/80mmHg (Choi & Lee, 2012). Controlling the blood sugar at the same time would reduce overworking kidney. One should keep the sugar level under control by avoiding sugary foods. To ensure electrolyte balance, foods with too much salt and potassium should be avoided. The patient should get regular exercises and eat meals of low fat and cholesterol. They should also avoid foods with proteins and those who smoke tobacco should stop it to reduce overworking the kidney in filtering the waste materials such as the ammonia products from proteins (Gupta et al., 2005). The patient should be treated with medicines called phosphate binders that help prevent high phosphorous levels. They should take foods with extra iron, iron pills and special shots of a medicine called erythropoietin to treat anemia as well as calcium and vitamin D (Inzucchi et al., 2012). They should follow a special diet with limited fluids, eating less protein and keeping up to date with the hepatitis A and hepatitis B vaccines. The continuous use of medication however tends to diminish the ability of the kidneys to respond to the changes in body hormones and thus requiring that the patient be subjected to medication at all times to help normalize the functionalities of the kidney (Greer, Crews, & Boulware, 2012)..

Another treatment is dialysis in which the waste products are removed from the body system artificially when the kidneys have suffered complete failure. In hemodialysis, a machine is used to filter waste and excess fluids from the blood stream (Inzucchi et al., 2012). In another method of dialysis, a fluid with a dialysis solution is inserted into the abdomen and fills it with the

solution which absorbs waste and excess water. This is called peritoneal dialysis and the solution carries away the waste with it when removed. In extreme cases when the kidneys are damaged beyond recovery, kidney transplant is done whereby the damaged kidney is surgically removed and replaced with another (Gupta et al., 2005). However, the permanent damage to the kidney as well as the process of transplant could cause other complications to the patient and increased levels of pain. For patient at older age, the recovery from surgery during transplant could take long duration and thus affect their mobility, independence and ability for self-care (Greer, Crews, & Boulware, 2012).

### **Behavior as an influencing patient factor**

The patient should develop positive behavior during treatment of CKD. Non-pharmacotherapy treatment options such as behavioral modification tend to have greater impacts on the management of the illness since they pose no potential implications to the patient (Greer, Crews, & Boulware, 2012). The use of alcohol, smoking and poor dietary choices such as use of foods with high levels of cholesterol have potential harm on the patient even when under medication (Inzucchi et al., 2012). They should reduce alcohol consumption and tobacco usage especially for the elderly. The patient should develop self discipline towards avoiding all those factors that facilitate development of the disease. In this case self management and self-care attitudes in the endeavor to restore health are of crucial importance (Gupta et al., 2005).

## References

- Choi, E. S., & Lee, J. (2012). Effects of a face-to-face self-management program on knowledge, self-care practice and kidney function in patients with CKD before the renal replacement therapy. *Journal of Korean Academy of Nursing*, 42(7), 1070-1078.
- Greer, R. C., Crews, D. C., & Boulware, L. (2012). Challenges perceived by primary care providers to educating patients about CKD. *Journal of renal care*, 38(4), 174-181.
- Gupta, S. K., Eustace, J. A., Winston, J. A., Boydstun, I. I., Ahuja, T. S., Rodriguez, R. A., & Szczech, L. A. (2005). Guidelines for the management of CKD in HIV-infected patients: recommendations of the HIV Medicine Association of the Infectious Diseases Society of America. *Clinical Infectious Diseases*, 40(11), 1559-1585.
- Inzucchi, S. E., Bergenstal, R. M., Buse, J. B., Diamant, M., Ferrannini, E., Nauck, M., & Matthews, D. R. (2012). Management of hyperglycemia in type 2 diabetes: a patient-centered approach position statement of the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetes care*, 35(6), 1364-1379.