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**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.546225>Available online at: <http://www.iajps.com>**Research Article****OCCURRENCE AND MANAGEMENT OF UREMIC  
CARDIOMYOPATHY**

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**Received:** 12 March 2017**Accepted:** 26 March 2017**Published:** 28 March 2017**Abstract:**

*A questionnaire based study was carried on 50 patients suffering from uremic cardiomyopathy. The patients were selected randomly at Mayo hospital and Sheikh Zaid hospital, Lahore. The aims and objectives of the study were to identify the occurrence and management of uremic cardiomyopathy. Uremic cardiomyopathy is the condition of left ventricular hypertrophy, left ventricular dilatation or LV systolic dysfunction and it is reported to be a leading cause of premature cardiovascular mortality in patients with end-stage renal disease the medication given was beta blockers and ca-channel blockers. Dialysis is an alternative medical treatment option for many people living without functioning kidneys. Frequent hemodialysis is associated with less dialysis-induced hypotension and myocardial stunning compared with conventional hemodialysis. Dialysis patients often require multiple pharmacotherapies and complicated drug regimens to manage their conditions. They have increased risk of drug adverse events and drug complications.*

**Key words:** *Left ventricular hypertrophy; Left ventricular dilation; end-stage renal disease; chronic kidney disease;*

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**INTRODUCTION:**

Uremic cardiomyopathy, defined by the presence of left ventricular hypertrophy (LVH), left ventricular (LV) dilatation or LV systolic dysfunction (LVSD), is reported to be a predictor of premature cardiovascular mortality in patients with end-stage renal disease (ESRD) [1].

Patients with end stage renal failure (ESRF) have an increased risk of premature cardiovascular disease. Left ventricular (LV) abnormalities, so called 'uremic cardiomyopathy', are associated with poorer outcome [2]. LVH is the main and early manifestation of uremic cardiomyopathy, it is by itself a powerful independent predictor of survival in CKD, and the regression of LVH is associated with reduced cardiovascular risk and improved survival [3].

LVH is remarkably frequent in uremic patients at the beginning of dialysis. It is usually detected by echocardiography and defined as a left ventricular mass index (LVMI) equal to or greater than 134 and 110 g/m<sup>2</sup> for men and women, respectively. In dialysis patients, there are some limitations to the calculation of LVMI because of the rapid changes in the hydration status of patients during treatment [4, 5].

Conventional hemodialysis is the most common treatment for uremic cardiomyopathy, and it may be associated with reduction in LVH [6].

Many medicines are used to treat cardiomyopathy. Angiotensin-converting-enzyme (ACE) inhibitors can be effective even in normotensive patients. ACE inhibitors, angiotensin II receptor blockers, beta blockers, and calcium channel blockers are examples of medicines that lower blood pressure. Beta blockers, calcium channel blockers, and digoxin are examples of medicines that slow the heart rate [7].

Hemodialysis is like any other cardiomyopathy treatment, it might be more effective when applied before the start of the irreversible injury to the myocardium [8]. Therefore, identifying patients who need to be started on hemodialysis without delay is important. Non-conventional hemodialysis is associated with less dialysis-induced hypotension and myocardial stunning compared with conventional hemodialysis. This may contribute to improved

outcomes associated with frequent hemodialysis therapies [9].

A recent study showed that, as compared with conventional hemodialysis, frequent hemodialysis was associated with favorable results with respect to the composite outcomes of death or change in LVMI and death or change in a physical-health composite score, even though this modality prompted more frequent interventions related to vascular access [10]. In 2003, more than 320,000 people in the United States were receiving dialysis for ESRD, with a predicted increase to 2 million by 2030. Mortality from cardiovascular diseases (CVD) in patients with ESRD is 10 to 30 times higher than that in the general population. Cardiovascular complications lead in all causes of mortality among patients with CKD, accounting for approximately 50% of deaths [11, 12].

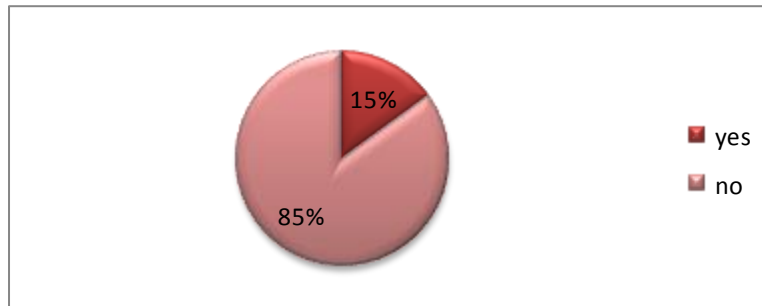
Renal transplantation has been shown to increase a significant survival advantage over maintenance hemodialysis [13]. United States Renal Data System (USRDS) data indicate that the mortality rate for patients who received kidney transplant is remarkably better than that of patients with ESRD or those who are on conventional hemodialysis [14].

**MATERIALS AND METHODS:**

The study done in this report is exploratory. An observational and questionnaire based study was conducted from July to September 2016 about the Occurrence and management of uremic cardiomyopathy. 50 inpatients were randomly selected for the study at Mayo hospital and Sheikh Zaid hospital, Lahore. . The age of the patients was between 40 to 80 years. A data collection form was designed and was filled during face to face interviews with the patients and health care providers. The data collected was computed and results were interpreted in the form of graphs.

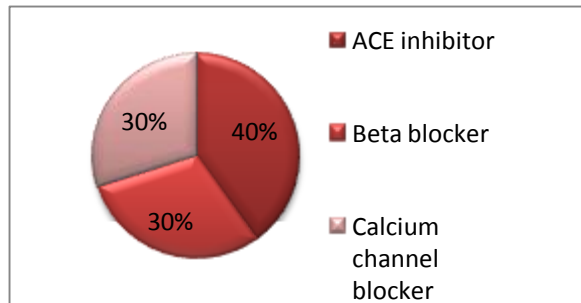
**RESULT AND DISCUSSION:**

**Do any of blood relatives have uremic cardiomyopathy?**



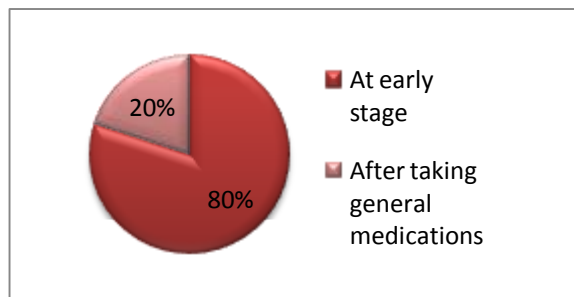
Uremic cardiomyopathy is an underdiagnosed disease. Its cause is usually unknown. Frequently it is known as acquired disease. How often hypertrophic cardiomyopathy is inherited from a person's parents while dilated cardiomyopathy may also result from alcohol, heavy metals, coronary heart disease, cocaine use, and viral infections. It is a leading cause of death among patients with chronic heart disease.

#### What medicines prescribed frequently for uremic cardiomyopathy?



Uremic cardiomyopathy is a condition of chronic renal failure whose cause is unclear and treatment remains disappointing. Cardiovascular complications lead in all causes of mortality among patients with chronic kidney disease. Angiotensin-converting-enzyme (ACE) inhibitors can be effective. ACE inhibitors, angiotensin II receptor blockers, beta blockers, and calcium channel blockers are examples of medicines that lower blood pressure. Beta blockers and calcium channel blockers are examples of medicines that slow the heart rate.

#### When to start hemodialysis?

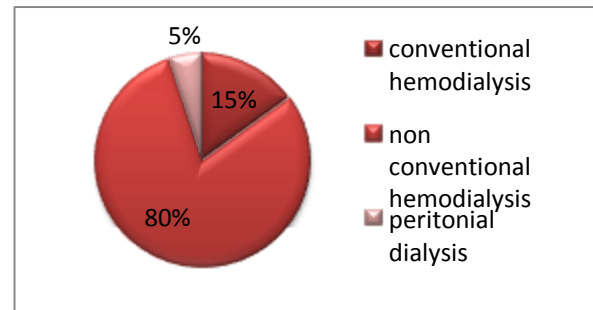


It is a critical matter to decide when to start hemodialysis. In history, there were some reports that have indicated a relationship between higher start estimated glomerular filtration and higher. Hemodialysis as treatment choice of cardiomyopathy,

it might be more effective when applied before the start of the irreversible injury to the myocardium. Therefore, identifying patients who need to be started on hemodialysis without delay is important.

In current study it was suggested that dialysis is an ultimately treatment option so, it should be started at early stage of disease. Once the symptoms become worse it is difficult for the patient to tolerate the dialysis as it may cause hypotension and other severe side effects.

#### Which type of hemodialysis should be preferred?



Dialysis is an alternative medical treatment option for many people living without functioning kidneys. Conventional hemodialysis is the most common treatment for uremic cardiomyopathy, and reduces Left ventricular hypertrophy. Hemodialysis also treats the systolic dysfunction. Frequent hemodialysis or non-conventional hemodialysis is associated with less dialysis-induced hypotension and myocardial stunning compared with conventional hemodialysis. This may contribute to improved outcomes associated with frequent hemodialysis therapies. Physicians suggest dialysis as a first line treatment for patients who suffered from uremic cardiomyopathy. Patient non-compliance is also a leading cause of death among patients.

Mortality from cardiovascular diseases (CVD) in patients with end stage renal disease is 10 to 30 times higher than that in the general population. Cardiovascular complications lead in all causes of mortality among patients with chronic kidney disease, accounting for approximately 50% of deaths

#### CONCLUSION:

Cardiac disease is the leading cause of death in uremic patients. Dialysis should start as soon as the disease is diagnosed to reduce myocardial risks. Patient non-compliance is also a leading cause of death among patients. , as compared with conventional hemodialysis, frequent hemodialysis

was associated with favorable results. Frequent hemodialysis induces fewer side effects like hypotension and coronary syndrome as caused by the conventional hemodialysis.

Dialysis patients often require multiple pharmacotherapies and complicated drug regimens to manage their conditions. They have increased risk of drug adverse events and drug complications.

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