



IJPPR

INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH  
An official Publication of Human Journals

ISSN 2349-7203



Human Journals

Research Article

June 2021 Vol.:21, Issue:3

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## Estimation of Pre and Post Clinical Vital Parameters in Patients with CKD Undergoing Hemodialysis

	
<b>Gaurav Rajauria*, Devendra Singh, Nidhi Saraswat</b>	
<i><sup>1,2</sup>Assistant Professor, School of Pharmacy, Mangalayatan University Beswan, Aligarh, India.</i>	
<b>Submitted:</b>	25 May 2021
<b>Accepted:</b>	02 June 2021
<b>Published:</b>	30 June 2021



[www.ijppr.humanjournals.com](http://www.ijppr.humanjournals.com)

**Keywords:** vital signs, weight, blood pressure, ESRD, hemodialysis

### ABSTRACT

Chronic kidney disease is the major health problem affecting approximately 13% united state population and Indian scenario Approximately 800 / million cases were reported due to diabetes and cardiovascular disease. Hemodialysis occurring due to ultra filtration by increasing the hydrostatic pressure of the blood, the process of filtration is based on diffusion principally depend upon concentration gradient to across the semipermeable membrane. The variation of pre and post vital parameter in chronic kidney disease are critical period associated with increased mortality rate. To evaluate the pre and post vital parameter in patients with chronic kidney disease undergoing hemodialysis. A prospective observational study of six month conducted in the nephrology department with n= 81 patients. A systemic protocol followed to obtain permission to IEC by submitting a proper protocol, data collection form, patient information and consent form and evaluated biomedical literature and articles. All parameters were evaluated during before and after the hemodialysis. Variations find in vital systolic and diastolic blood pressure elevated and pulse rate also. It was concluded that the clinical vital parameter vary before and after the hemodialysis, these vitals are useful for the minimized or prevent other complication.

## INTRODUCTION

Chronic kidney disease is the major health problem affecting approximately 13% united state population and Indian scenario approximate 800 per million case were reported due to diabetes and cardiovascular disease.<sup>[1,2,3,14]</sup> If GFR is below then 15ml/min 1.73 meter square ( 0.14 ml/s meter square) required renal replacement and dialysis.<sup>[3,4]</sup> In the case renal damage – imaging and screening the proteinuria (screening and protein and creatinine ratio) an GFR. <sup>[3]</sup> Hemodialysis occurring ultra filtration by increasing the hydrostatic pressure of the blood, the process of filtration based on diffusion principally depend upon concentration gradient to across the semi-permeable membrane.<sup>[4]</sup> Despite its benefits to patients, hemodialysis involves different types of major and minor complications related elimination process.

The vital parameter such as blood pressure, weight, pulse rate are the important factor during the hemodialysis, these parameters arise the mortality rate in patients.<sup>[6]</sup> Weight is one the most important parameters to measure the amount of fluid removed after the dialysis, pre-dialysis weight known as the moist weight with body certain extra unusual fluid and post-dialysis the hemodialysis wight known as dry weight. <sup>[7,8]</sup> Dry weight means the lowest weight after the dialysis that can be tolerated without developing any other complication. <sup>[9,10]</sup> And other vital like pulse rate and blood pressure useful for the measurement of the other complications associated with hemodialysis. Range of systolic and diastolic blood pressure is necessary for the assessment of hypertension & hypotension.<sup>[11,12]</sup>

## Objective

To evaluate the pre and post vital parameter in patients with chronic kidney disease undergoing hemodialysis.

## MATERIALS AND METHODS

A prospective observational single centered study of six months was conducted in the nephrology department. A systemic protocol followed to obtain permission of IEC by submitting a proper protocol, data collection form, patient information and consent form and evaluated biomedical literature and articles. The study was approved by the research ethical committee. A total 81 patients diagnosed with chronic kidney disease with both male and female. A documentation form (data collection form) was designed to collect the patients information; form included demographic detail, physical examination, vital parameter, patient

treatment regimen, clinical data and laboratorial investigation. Data was compiled in excel sheet and statistical analyze the data with the help of SPSS 22.0. The level of significance was 5%.

## RESULTS

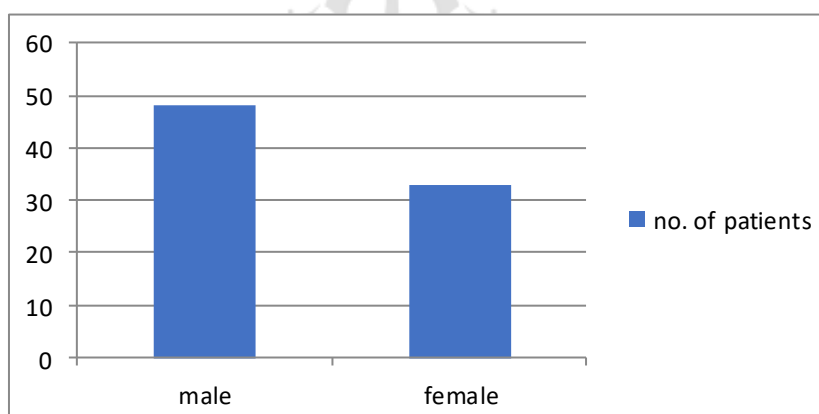
The observational study was analyzed the pre and post vital parameter.

### Number of population according to the gender

Out of 81; 48 (59.25%) male found and female found to be 33 (40.74%) in which male patients were more prone to CKD.

**Table no. 1: population according to the gender**

Gender	No. of patients	Percentage
Male	48	59.25%
Female	33	40.74%



**Figure no. 1: population according to the gender**

### Evaluation of pre and post clinical vital parameter

Out of 81 patients mean of presystolic BP were 158.70, mean of post systolic BP were 162.14, mean of pre diastolic BP were 101.82, mean of pre weight were 55.17, mean of post weight were 51.59, mean of pre pulse rate were 89.9. Systolic and diastolic BP increased, weight decreased and pulse rate was increased after hemodialysis. p-value of vital parameter such as systolic BP (0.481), diastolic BP (0.485), weight (0.453) and pulse rate (0.001). Result summarized in table no. 2.

Table no. 2: Evaluation of pre and post clinical vital parameter

Vital sign	Pre data	Post data	P – value
Systolic BP	158.7±30.89	162.14±35.53	0.481
Diastolic BP	97.93±19.93	101.82±26.73	0.485
Weight	55.17±11.32	51.89±10.85	0.453
Pulse	86.96±11.35	89.09±9.65	0.001

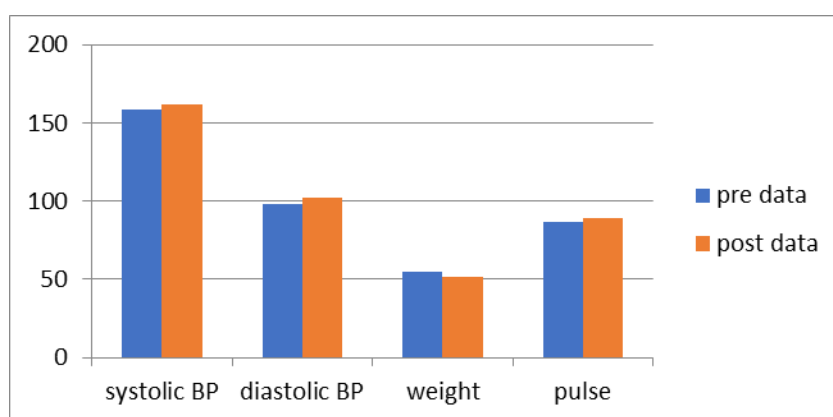


Figure no. 2: Evaluation of pre and post clinical vital parameter

## DISCUSSION

Some complications arise genetically or technically error and other inappropriate procedure also.<sup>[1]</sup> In our study 81 patient include CKD; in study rate of vital parameter higher in males 59.25% as compare to female 40.74%. Our study observed pre and post vital parameter. Out of 81 patients mean of presystolic BP were 158.7, mean of post systolic BP were 162.14, mean of pre diastolic BP were 97.93, mean of post diastolic BP were 101.82, mean of pre weight were 55.17, mean of post weight were 51.59, mean of pre pulse rate were 22.75, mean of post pulse rate were 24.56 in which the p-value of systolic BP were (0.581), and p value weight were (0.453), p value of pulse rate were (0.001).<sup>[2,3,13]</sup> weight is one of the most important parameters to measure the amount of fluid remove after the dialysis, pre dialysis weight known as the moist weight with body contain extra unusual fluid and post dialysis weight known as dry weight. The p value of dry weight is similar then the previous study.<sup>[4,5,12]</sup> pulse rate and blood pressure useful for the measurement of other complications associated with hemodialysis. In our study, pulse rate was evaluated and observed increased rate as compare than previous study.<sup>[6,10,11]</sup> Range of systolic and diastolic blood pressure is



necessary for the assessment of hypertension and hypotension during the hemodialysis. The rate of systolic and diastolic blood pressure was increased as compared to previous.<sup>[7,8,9]</sup>

## CONCLUSION

It was concluded that the clinical vital parameter vary before and after the hemodialysis. These vitals are useful for the minimized or prevent the other complication arise during the hemodialysis. The finding of present study contributes planning and execution of care to on hemodialysis, resulting in actions based on evaluates the clinical vital signs.

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	<p><b>Author Name – Dr. Gaurav Rajauria</b></p> <p><i>Author Affiliation: Assistant Professor</i></p> <p><i>Author Address: Mangalayatan University Beswan, Aligarh Uttar Pradesh</i></p>
	<p><b>Author Name: Mr. Devendra Singh</b></p> <p><i>Author Affiliation: Assistant Professor</i></p> <p><i>Author Address: Mangalayatan University Beswan, Aligarh Uttar Pradesh</i></p>
<p><i>Image</i></p> <p><i>Author -3</i></p>	<p><b>Author Name: Nidhi Saraswat</b></p> <p><i>Author Affiliation: Student</i></p> <p><i>Author Address: Mangalayatan University Beswan, Aligarh Uttar Pradesh</i></p>

