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PREVALENCE OF HYPERTENSION IN PATIENTS WITH CHRONIC KIDNEY DISEASE-A REVIEW

[1]Dr.G.BABY SRESHTA, [2]Ms. M. SUDESHNA, [3]Mr.POTLI MAHESHWAR REDDY, [4]Ms PINNAMRAJU SUSMITHA, [5]Ms R.SINDHU, [6]Ms M.KAVITHA

[1]Assistant professor, [2, 3, 4, 5,6B.Pharmacy

[1]Department of pharmacy practice

[1]Sri Padmavathi School of Pharmacy, Tirupati, India

Abstract:

Background: Hypertension is a risk factor for renal disease. Therefore, this study was aimed at estimating The prevalence of hypertension in CKD patients.

Method: The search was carried out using English keywords in national and international databases including Science Direct, Pub med, Medline, and Google Scholar search engine without any time limitation until 2015.

Result: In 25 reviewed studies with a sample of 15,621 subjects, the prevalence of hypertension in CKD patients were 35% (25% in women and 18% in men). The prevalence of systolic hypertension in CKD patients was 5%, diastolic hypertension 26%, and diabetes 23%. The prevalence of hypertension in Hemodialysis patients was 34%, 27% in peritoneal dialysis, and 43% in kidney transplantation, and 26% in chronic kidney failure.

Conclusion: More than a third of kidney patients in India suffer from high blood pressure. The diastolic blood pressure of these patients is about five times higher than their systolic blood pressure. Moreover, the age group under 30 is a high-risk group. The prevalence of hypertension in women with kidney disease are higher than in men. In addition, patients who have kidney transplants are more likely to have high blood pressure than other kidney patients.

Keywords: Hypertension, kidney Disease, CKD, prevalence, Kidney Transplant, Hemodialysis, Systolic Blood Pressure

1. INTRODUCTION

Chronic disease is one of the most serious health challenges now affecting patients' physical, psychological, economic, social, and quality of life. Hypertension is a widespread chronic condition that is the root cause of many other disorders, including heart disease, stroke, and advanced renal disease. It is a pervasive, asymptomatic condition that is frequently referred to as a silent killer on a global scale. The prevalence of this illness might range from 10% to more than 60%, depending on the community, Another statistic claims that elevated blood pressure is the root cause of 4.5% of all ailments worldwide. From 1999 to 2015, hypertension was present in 18% of the studies reviewed. Hypertension was found in 23% and 4% of those above the age of 20, respectively. 25 studies with a total sample size of 15,621 participants found that the average rate of hypertension among diabetics was 23% (95% CI: 43%-60%).

End-stage CKD disease (ESRD) is the final stage of an irreversibly developing CKD ailment. The Centers for Disease Control and Prevention stated in 2014 that more than 20% of people with high hypertension also had chronic kidney disease and were at risk of developing end-stage renal disease (ESRD). However, 74% to 81% of ESRD patients had high blood pressure. Considering that published studies on the prevalence of hypertension in renal patients reported incidence rates ranging from 12% to 83%.

2. METHODOLOGY

2.1 AIM: The current research's principal objective is to examine the prevalence of hypertension in CKD patients.

2.2 OBJECTIVES

- To determine the prevalence of hypertension in chronic kidney disease
- To determine the gender impact, age impact.

2.3 STUDY DESIGN

- A systematic review

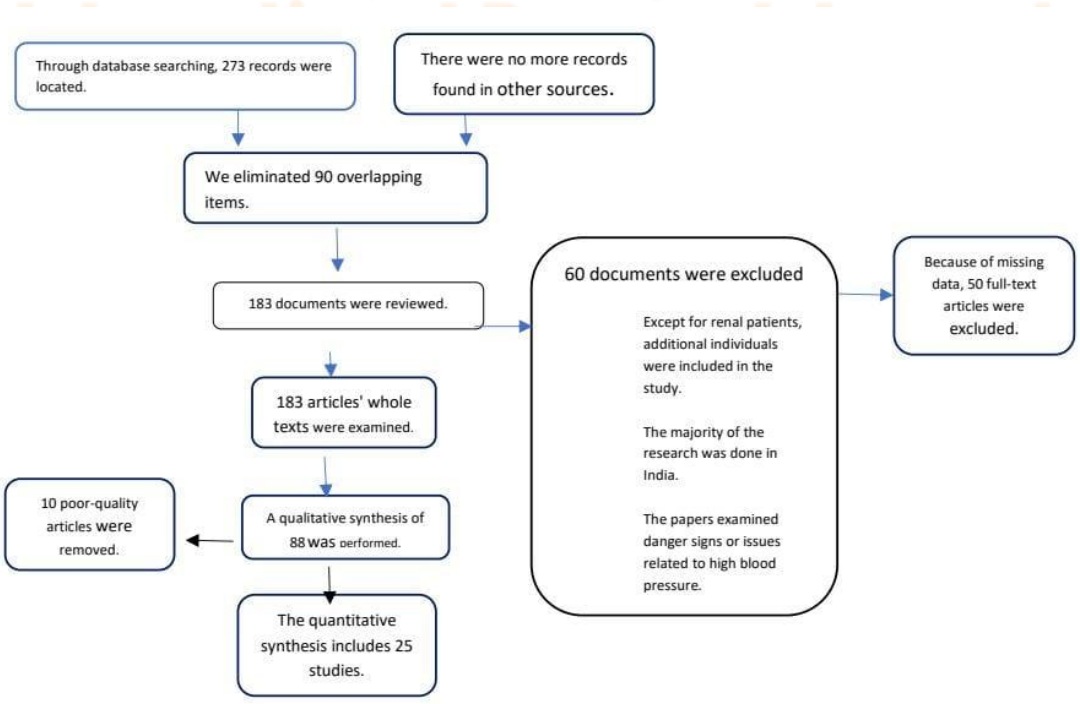
2.4 STUDY PROTOCOL

The prevalence of hypertension in CKD is the focus of this systematic review. In accordance with this protocol, all stages of the research technique were completed, including the search, study selection, qualitative assessment, and data extraction from the studies. In order to resolve any inconsistencies in the researchers' reports, the third researcher looked into them.

2.5 SEARCH STRATEGY

This study looks at the prevalence of hypertension in persons with CKD. Our search took into account international resources like Science Direct, Pub Med, and Medline. The mechanism for finding publications was independently carried out and was based mostly on a systematic search of related English keywords (Kidney illness, CKD, Hypertension, prevalence incidence). Without a deadline until 2015, keywords were also looked up for the final analysis in the Google Scholar search engine.

2.6 STUDY SELECTION

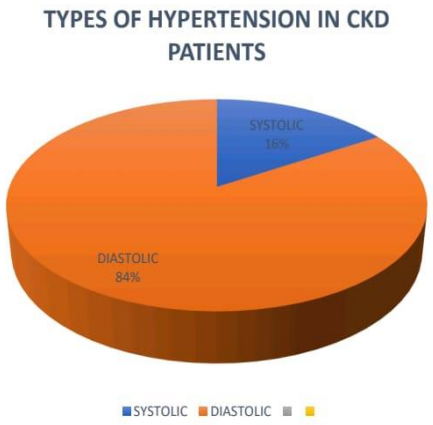


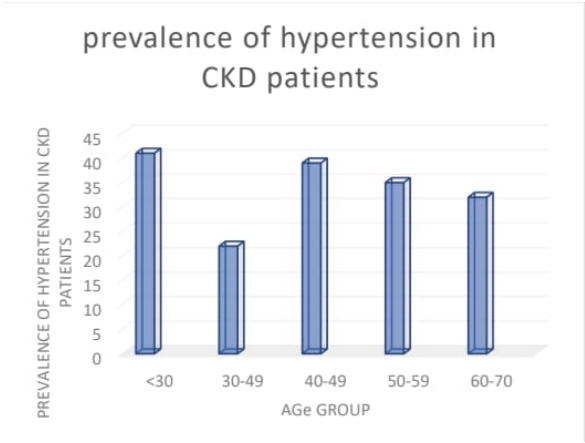
2.7 STATISTICAL ANALYSIS

A suitable statistical analysis is applied to obtain the results.

3. RESULT

- The prevalence of hypertension in CKD patients was reported to be 35% (95% CI: 29%-41%), in 25 papers with a sample size of 15,621 persons. The prevalence of hypertension was 9% in the Brahimi study and 86% in the Fazelzadeh study.
- Given the variety of studies, the confidence interval (CI) for each is provided (TABLE NO 1). In men and women with CKD, the prevalence of hypertension was 18% (95% CI: 15%-22%) and 35% (95% CI: 16%-35%), respectively.
- Additionally, the prevalence of diabetes was 23% (95% CI: 17%-29%), systolic hypertension was 5% (95% CI: 0%-13%), and diastolic hypertension was 26% (95% CI: 0%-77%). Women with CKD have a 7% higher rate of hypertension than men. (TABLE NO. 2)
- According to an analysis based on the kind of CKD condition, 34% (95% CI: 23%-45%) of Hemodialysis patients had hypertension. In nine more studies on kidney transplant recipients, the prevalence of hypertension was 43% (95% CI: 19%-67%).
- Furthermore, two studies on peritoneal dialysis patients were conducted, showing a prevalence of hypertension of 27% (95% CI: 16%-38%). We discovered that 26% (95% CI: 17%-34%) of people with chronic renal failure had hypertension in the three most recent studies. Compared to individuals who get Hemodialysis, peritoneal dialysis, or chronic renal dialysis, patients having kidney transplants are more likely to have hypertension.
- Age-based analysis revealed that the prevalence of hypertension was 41% (95% CI: 12%-69%) among CKD patients aged 1 to 29, 22% (95% CI: 9% to 36%) among patients aged 30 to 39, 39% (95% CI: 20% to 57%) among patients aged 40 to 49, 35% (95% CI: 26%-44%) among patients aged 50 to 59, and 32% (95% CI: 16% to 48%) among patients aged 60 to 70. (Bar graph no1).
- Furthermore, CKD patients aged 1 to 29 are more likely than other patients to have hypertension; however, due to the uneven number of studies in each age range, we cannot be certain. After removing Brahimi's study, the prevalence of hypertension in CKD patients climbed to 36.16% (95% CI: 28.58%-43.77%) and reduced to 33.65% (95% CI: 28.55%-38.75%). The prevalence of hypertension in women with renal illness is higher than in men (pie chart no. 2).





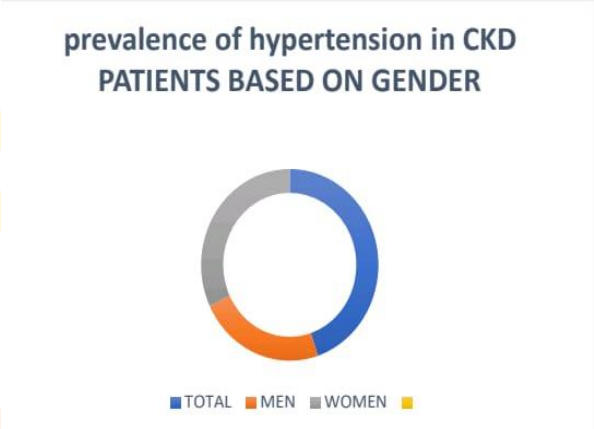


Table no 1 Qualitative Features of Studies Eligible for Systematic Review

S.no	author	age	Year of study	Type of disease	Sample size	Prevalence of hypertension (%)
1	[11]Barahimin	>30	2011	CKD	11720	9
2	[12]mogharab	56-65	2007	hemodialysis	10	12.5
3	[13]shamsa	35.26	2003-2004	Kidney transplantation patients	15	40
4	[14]ayazi	51.2	2002-2003	Peritonial dialysis	21	38
5	[15]Safari nezhad	>14	2002-2005	CKD	16354	17.3
6	[16]rahiminan	56.7	2005	hemodialysis	60	12
7	[17]khademvartan	55	2014	hemodialysis	386	35.5
8	[18]najafi	46.6	2001-2006	Peritonial dialysis	2302	24.2
9	[19]pakfetrat	38.5	2000-2001	Kidney transplantation patients	1354	11.6
10	[20]noshad	48	2003-2005	Kidney transplantationpatients	50	26
11	[21]rezaeinlangroodi	**56-65**	**2009**	hemodialysis	455	22.1
12	[22]shasti	62.26	2010	hemodialysis	100	26.1
13	[23]Jalal zadeh	56.6	2009-2010	hemodialysis	80	68.8
14	[24]ghorabanimaghadda	55.7	2014	hemodialysis	93	34.5
15	[25] gheisari	11.01	2001-2011	CKD	268	55

Table no 2 Prevalence of hypertension in CKD patients

S.NO	SUB GROUP		PREVALENCE (95%) CI
1	SEX	• TOTAL • MEN • WOMEN	• 35 (29-41) • 18(15-22) • 25(16-35)
2	TYPE OF HYPERTESION	• SYSTOLI • DIASTOLIC	• 5(0-13) • 25(0-77)
3	TYPE OF DISEASE	• CKD • KIDNEY TRANSPLANTATION PATIENTS • PEROTONIAL DIALYSIS • HEMODIALYSIS	• 26(17-34) • 43(19-67) • 27(16-38) • 34(23-45)
4	AGE (YEAR)	• <30 • 30-49 • 40-49 • 50-59 • 60-70	• 41(12-69) • 22(9-36) • 39(20-57) • 35(26-44) • 32(16-48)

4. CONCLUSION

Hypertension affects more women with kidney disease than men, and it affects transplant recipients more than non-transplanted renal patients. Diastolic blood pressure occurs more frequently than systolic blood pressure in CKD patients—nearly five times more frequently. Additionally, those under the age of 30 are a high-risk cohort.

REFERENCE

1. Motedayen M, Sarokhani D, Meysami A, Jouybari L, Sanagoo A, Hasanpour Dehkord A.2018. The prevalence of hypertension in diabetic patients in Iran; a systematic review and meta-analysis. J Nephropathol;7:137-44.
2. Mohsenzadeh Y, Motedayen M, Hemmati F, Sayehmiri K, Sarokhani M, Sarokhani D.2017.Investigating the prevalence rate of hypertension in Iranian men and women: A study of systematic review and meta-analysis J Bas Res Med Sci;4:53-62.
3. Ahmadi SM, Jalali A, Jalali R.2018. Factors associated with the choice of peritoneal dialysis in Iran: Qualitative study. Open Access Macedonian J Medical Sciences ;6:1253
4. Von Elm E, Altman D, Egger M, Pocock S, Gotzsche P, Vandenbroucke J.2007. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: Guidelines for reporting observational studies. Ann Intern Med ;147:573-7
5. Kalender B, Ozdemir A, Dervisoglu E, Ozdemir O.2007.Quality of life in chronic kidney disease: Effects of treatment modality, depression, malnutrition and inflammation. International J Clinical Practice ;61:569-76.
6. Rezaei Z, Jalali A, Jalali R, Khaledi-Paveh B.2018 Psychological problems as the major cause of fatigue in clients undergoing hemodialysis: A qualitative study. International J Nursing Sciences ;5:262-7.
7. Cruz MC, Andrade C, Urrutia M, Draibe S, Nogueira-Martins LA, Sesso RdCC.2011.Quality of life in patients with chronic kidney disease. Clinics ;66:991-5
8. Noghabi AA, Zandi M, Mehran A, Alavian SM, Dehkordi AH.2010. The effect of education on quality of life in patients under interferon therapy. Hepatitis Monthly ;10:218.
9. Series WTR. Hypertension control. Report of a WHO Expert Committee, 1996.
10. Hasanpour AD.2016. Influence of yoga and aerobics exercise on fatigue, pain and psychosocial status in patients with multiple sclerosis: A randomized trial. The J Sports Medicine and Physical Fitness ;56:1417-22
11. Barahimi H, Aghighi M, Aghayani K, Rahimi Foroushani A.2014. Chronic kidney disease management program in Shahreza. Iran J Kidney Dis 8:450-6.
12. Mogharab M, Rezaee N, Tahouri F, Taheri P, Jani H.2007.Complications during hemodialysis in chronic hemodialysis patients using dialysis buffer solution with sodium acetate and sodium bicarbonate. Mod Care J ;4:21-8.
13. 13. Shamsa A, Motavalli M, Aghdam B.2005 Erectile function in end-stage renal disease before and after renal transplantation. Transplant Proc;37:3087-9
14. Ayazi K, Atabak S, Saghebi R, Ayazi S, Aryasepehr S.2005.Evaluation of efficacy, survival rate and complications of pert] itoneal catheter placement of patients with end – Stage renal disease. Saudi Med J ;26:1391-3.
15. Safarinejad M.2009. The epidemiology of adult chronic kidney disease in a population-based study in Iran: Prevalence and associated risk factors. J Nephrol; 22:99-108.
16. Rahimi Foroushani A.2014. Chronic kidney disease management program in Shahreza. Iran J Kidney Dis 8:450-6.
17. KhademVatan K.2014. Evaluation of the effective risk factors for peripheral vascular disease in hemodialysis patients J Urmia Nurs Midwifery Fac ;12:585-90.
18. Najafi I, Alatab S, Atabak S, Nouri Majelan N, Sanadgol H, Makhdoomi K, et al.2014.Seventeen years' experience of peritoneal dialysis in Iran: First official report of the Iranian peritoneal dialysis registry. Perit Dial Int;34:636-42.
19. Pakfetrata M.2013. Common echocardiography findings in pretransplant dialysis patients and their associations. Hong Kong J Nephrol;15:68-74.
20. Noshad H.2007. Kidney transplantation candidates and cardiovascular risk factors. Transplant Proc;39:871-4.

21. Rezaeian Langroodi R.2008. Evaluation of risk factors for chronic renal failure in hemodialysis patients referring to hospitals affiliated to Hamedan University of Medical Sciences. Aflak Q J;7:13-9.

22. Shasti S, Babahaji M.2011. The assessment of dialysis adequacy among Hemodialysis patients in Tehran City. EBNESINA- Journal of Medical;14:23-7.

23. Jalalzadeh M, Mohammadi R, Mirzamohammadi F, Ghadiani M.2011. Prevalence of metabolic syndrome in a hemodialysis population. Iran J Kidney Dis;5:248-54.

24. Ghorbani Moghadam Z, Sharifi S.2015. The frequency of underlying conditions for chronic renal failure in patients undergoing dialysis in Shohada Hospital in Bushehr. Nurs J Vulnerable;2:46-54.

25. Gheissari A, Hemmatzadeh S, Merrikhi A, Fadaei Tehrani S, Madihi Y.2012 Chronic kidney disease in children: A report from a tertiary care center over 11 years. J Nephropathol;1:177-82.