



[\(Home.aspx\)](#)

Research Journal of Pharmacy and Technology

[\(Home.aspx\)](#)

ISSN

0974-360X (Online)

0974-3618 (Print)

[HOME ▾ \(HOME.ASPX\)](#)

[PAST ISSUES \(PASTISSUES.ASPX\)](#)

[EDITORIAL BOARD \(EDITORIALBOARD.ASPX\)](#)

[Submit Article \(SubmitArticle.aspx\)](#)

[FOR AUTHORS](#)

[MORE ▾](#)

[NEWS \(NEWS.ASPX\)](#)

A Prospective Study on assessment of Quality of Prescribing in Patients with Hypertension using Prescription Quality Index (Pqi) Tool in a Tertiary Care Hospital (AbstractView.aspx?PID=2019-12-2-14)

Author(s): P. Maheshwari (search.aspx?key=P. Maheshwari), T. S. Shanmugarajan (search.aspx?key=T. S. Shanmugarajan), P. Shanmugasundaram (search.aspx?key=P. Shanmugasundaram)

Email(s): mahe.mpharm@gmail.com (mailto:mahe.mpharm@gmail.com)


DOI: 10.5958/0974-360X.2019.00095.7 (https://doi.org/10.5958/0974-360X.2019.00095.7)

Address: P. Maheshwari*, T. S. Shanmugarajan, P. Shanmugasundaram
Department of Pharmacy Practice, School of Pharmaceutical Sciences, Anna University,
Tamilnadu, India,

*Corresponding Author

Published In: Volume - 12, Issue - 2, Year - 2019 (Issues.aspx?VID=12&IID=2)

Keywords: Hypertension () Prescription () quality index. ()



✕

Hi,

i-600117,



Cite this article:

P. Maheshwari, T. S. Shanmugarajan, P. Shanmugasundaram. A Prospective Study on assessment of Quality of Prescribing in Patients with Hypertension using Prescription Quality Index (Pqi) Tool in a Tertiary Care Hospital. *Research J. Pharm. and Tech* 2019; 12(2):541-544. doi: 10.5958/0974-360X.2019.00095.7



View PDF



RJPT
online



RJPT
Hi,

A Prospective Study on assessment of Quality of Prescribing in Patients with Hypertension using Prescription Quality Index (Pqi) Tool in a Tertiary Care Hospital

P. Maheshwari*, T. S. Shanmugarajan, P. Shanmugasundaram

Department of Pharmacy Practice, School of Pharmaceutical Sciences, VISTAS, Pallavaram, Chennai-600117, Tamilnadu, India,

*Corresponding Author E-mail: mahe.mpharm@gmail.com

ABSTRACT:

Objectives: To determine the Quality of Prescribing in Patients with Hypertension using Prescription Quality Index (PQI) Tool. Ensure the Rational Use of Anti-Hypertensive drugs. **Methods:** Prospective study of Anti-Hypertensive drugs should be conducted on 150 consecutive patients admitted in tertiary care Hospital. The duration of the study will be of 10 months. The prescriptions of the patient who are treated during the course of the study will be audited prospectively using a specially designed form to record the required information. **Results:** Total of 150 patients 86 were male and 64 were female. This study the age group who receive more Anti Hypertensive drugs are between 56-65 years(40%), In this study who are found with single comorbid condition is (41.3%), Multiple comorbid condition is (22.7%), In This study stages of Hypertension was validated, Pre Hypertensive (88%), Stage 1(57.3%), Stage 2 (34.7%). In This study different classes of drugs commonly used were Diuretics (72%). In the present study it was observed that the higher rates of (56.7%) received dual therapy for Hypertension than mono therapy (43.3%) and compared. **Conclusion:** Angiotensin II receptor blockers (ARBs) are more effective in slowing the progression of chronic kidney disease (CKD) than other antihypertensive regimens. The PQI is a comprehensive tool which is valid and reliable for measuring quality of prescribing in chronic disease like hypertension in Indian settings. PQI can be used for assessment and comparison of quality of prescribing in different clinical settings at different health care levels.

KEYWORDS: Hypertension, Prescription, quality index.

INTRODUCTION:

Prescriptions communicate medication plans from prescribers to pharmacists, and patients. A good prescription is rational, evidence based, clear, complete and improves the treatment outcome of the patient. While prescribing without an appropriate indication, correct dose, frequency, route of administration, schedule or duration of treatment and duplicate therapeutic agents and medication of potential drug-drug interactions or adverse reactions are all forms of inappropriate prescribing^(1,2).

Several tools have been developed to assess the quality of prescribing. These tools are based on expert judgment or consensus of practitioners without any information on the psychometric properties of the instruments^(3,4). These tools measure of quality of care in general or for specific disease, in specific population, overall use, specific areas of use, or specific drug or groups of drugs⁽⁵⁾.

Hypertension (HTN or HT), also known as high blood pressure (HBP), is a long-term medical condition in which the blood pressure in the arteries is persistently elevated. High blood pressure, however, is a major risk factor for coronary artery disease, vision loss, chronic kidney disease, and dementia. High blood pressure is classified as either primary (essential) hypertension. About 90–95% of cases are primary, defined as high blood pressure due to nonspecific lifestyle and genetic factors. Lifestyle factors that increase the risk include excess salt in the diet, excess body weight, smoking, and alcohol use. The remaining 5–10% of cases are categorized as secondary high blood pressure, defined as high blood pressure due to an identifiable cause, such as chronic kidney disease, narrowing of the kidney arteries, an endocrine disorder, or the use of birth control pills^(9,10).

MATERIALS AND METHODS:

Prospective study of Anti-Hypertensive drugs should be conducted on 150 consecutive patients admitted in Tertiary care hospital. The duration of the study will be of 10 months. The prescriptions of the patient who are treated during the course of the study will be audited prospectively using a specially designed form to record the required information. The data were statistically analyzed and presented as counts and percentages. The study was conducted with the expert guidance of the senior and junior physicians of the department selected for the study in the hospital. A patient information form has been prepared to inform the patient or the care givers about the purpose and necessity of the study. The patient information form assures that the confidentiality will be strictly maintained are also the study will help the betterment of the patient's health. The form includes the details like department address, name and signature of the investigator and supervisor, date, place and details about the studies. A separate data entry form for incorporating patient details was also designed. The format contains

details about the studies. A separate data entry form for incorporating patient details was also designed. The format contains the details such as name, age, gender, Ip no, DOA, DOD, reasons for admission, patients past medical history, comorbidities, Diagnosis, drug chart, drug interactions, Prescription Quality Index Tool (PQI).

RESULTS:

Table 1: Gender Distribution

S. No	Gender	No of Patients(N=150)	Percentage%
1	Male	86	57.4
2	Female	64	42.6

Table 2: Age Distribution

S. No	Age(Yrs)	No of Patients(n=150)	Percentage%
1	25-35	10	6.7
2	36-45	16	10.7
3	46-55	40	26.6
4	56-65	60	40
5	>65	24	16

Table 3: Comorbid Conditions

S. No	Comorbidities	No. of Patients (N=150)	Percentage%
1	Single	62	41.3
2	Multiple	34	22.7
3	No Comorbidities	54	36

Table 4: Stages of Hypertension

S. No	Stages	No of Patients(n=150)	Percentage%
1	Pre-HTN	12	8
2	Stage 1	86	57.3
3	Stage 2	52	34.7

Table 5: Different Class of Drugs Commonly Used

S. No	Drug Class	No of Patients (n=150)	Percentage %
1	Duretics	72	48
2	Calcium Channel Blockers	54	36
3	Angiotensin Converting Enzyme(Ace) Inhibitor	68	45.3
4	Angiotensin Receptor Blockers(Arb's)	46	30.7
5	β-Blockers	52	34.7

Table 6: Based on Drug Therapy

S. No	Drug-Therapy	No Of Patients(n=150)	Percentage%
1	Mono Therapy	85	56.7
2	Dual Therapy	65	43.3

Table 7: Compliance Status

S. No	Status	No of Patients (n=150)	Percentage%
1	Compliant	135	90
2	Non-Compliant	15	10

Table 8: Based on BMI (Kg/M²)

S. No	BMI (Kg/M ²)	No of Patients (n=150)	Percentage %
1	UNDERWEIGHT(<20)	6	4
2	NORMAL WEIGHT (20-27.5)	132	88
3	OVERWEIGHT(>27.5)	12	8

Table 9: Prescribing Quality

S. No	Quality	No of Patients (n=150)	Percentage %
1	Poor Quality(≤31)	6	4
2	Medium Quality(32-33)	30	20
3	High Quality (34-43)	114	76

Table 10: Total Score PQI Correlation with 22 Criteria

Criteria No	PQI Criterion	Correlation Coefficient (n=150)	P Value
1	Indication	0.76**	<0.001
2	Dosage	0.76**	<0.001
3	Effectiveness	0.80**	<0.001
4	Evidence-Based	0.84**	<0.001
5	Correct Directions	0.84**	<0.001
6	Practical Directions	0.95**	<0.001
7	Drug-Drug Interactions	0.95**	<0.001
8	Drug-Disease Interactions	0.76**	<0.001
9	Adverse Drug Reactions	0.8**	<0.001
10	Unnecessary Duplication	0.91**	<0.001
11	Duration Of Therapy	0.95**	<0.001
12	Cost	-0.20**	<0.001
13	Generic Prescribing	0.44**	<0.001
14	Essential Drug List	-0.36**	<0.001

15	Compliance	0.77**	<0.001
16	Medications Name	0.87**	<0.001
17	Legibility	0.71**	<0.001
18	Prescribers Information	0.14**	<0.001
19	Patients Information	0.84**	<0.001
20	Diagnosis	0.84**	<0.001
21	Requirements For Drug Therapy	-0.2**	<0.001
22	Patients Improvement	0.59**	<0.001

Table 11: Criteria wise Mean PQI Score

Criterion	Maximum Score	Score (Mean±Sd)
Indication	4	3.89±0.4509
Dosage	4	3.89±0.4509
Effectiveness	2	1.86±0.4509
Evidence Based	2	1.76±0.4509
Correct Directions	2	1.76±0.451
Practical Directions	2	1.70±0.4509
Drug-Drug Interactions	2	1.70±0.4509
Drug-Disease Interactions	2	1.89±0.4509
Adverse Drug Reactions	2	1.86±0.4509
Unnecessary Duplication	1	1.0±0.451
Duration Of Therapy	2	1.70±0.451
Cost	1	0.57±0.451
Generic Prescribing	1	1.0±0.4509
Essential Drug List	1	0.44±0.451
Compliance	2	1.85±0.451
Medication's Name	2	1.52±0.4509
Legibility	2	1.57±0.451
Patient's Information	2	2.0±0.4509
Prescriber's Information	2	1.76±0.451
Diagnosis	2	1.76±0.4509
Requirement For Drug Therapy	1	0.57±0.451
Patient's Improvement	2	1.62±0.451
Total Score	43	1.71±0.844

PQI=PRESCRIPTION QUALITY INDEX
SD=STANDARD DEVIATION

RESULTS:

The tool has been validated hence selected for assessment of prescribing quality in HTN. In This study the patient's who received Anti-HTN drugs were identified mostly in General Medicine department based on diseased condition. In this study the male (57.4%) population prescribed with anti hypertensive drugs was found to be more than female (42.6%). In this study the age group who receive more Anti Hypertensive drugs are between 56-65 years(40%), followed by 46-55 years (26.6%), In our study the patient who received Anti Hypertensive drugs are mostly with underlying comorbidities such as Diabetes Mellitus, Bronchial Asthma, Coronary Artery Disease. In that the patients who are found with single comorbid condition is (41.3%), Multiple comorbid condition is (22.7%), with No comorbidities is (36%). In our study stages of Hypertension was validated, from that it is seen that patients who received Anti Hypertensive drugs were Pre Hypertensive (88%), Stage 1(57.3%), Stage 2 (34.7%). In this study different classes of drugs commonly used were Diuretics (72%), followed by ACE inhibitors (45.3%), followed by Calcium channel blockers (54%), followed by other drugs such as ARB's (46%), Beta-Blockers (52%). In this study it was observed that the higher rates of (56.7%) received dual therapy for Hypertension than mono therapy (43.3%). In this study the patients who received Anti Hypertensive drugs undergoes compliance status such as (90%) compliance and (10%) non-compliance. In this present study the patients who received Anti Hypertensive drugs were checked with Body Mass Index from that it is seen (4%) are Underweight, (88%) Normal weight, (8%) Overweight. In this study, with the Help of PQI tool Quality of Prescription is assessed such as patients with poor quality prescription is (4%), Medium Quality (20%), High quality (76%). The PQI total scores were correlated with drug Indication, Drugeffectiveness, Evidencebased, correctdirection, Unnecessary duplication, duration of therapy and cost. There was moderate correlation for seven criteria and weak correlation for two criteria. The scores were strongly correlated with drug indication and drug dosage. However, the scores were not significantly correlated with Patient's Information, Hi, at least one of these- unnecessary duplication strongly correlated with Patient's Information, the factors affecting PQI score and prescription quality.

CONCLUSION:

As this study focused on quality of prescribing in patients receiving Anti-HTN drugs using prescription quality index assessment tool, it is found that majority of the prescription for hypertension in tertiary health care setting are of high quality. We conclude that diuretics, calcium channel blockers and angiotensin II receptor blockers were the most commonly prescribed drugs either alone or in combination with other class of drugs for effective control of blood pressure in different comorbid conditions. Calcium channel blockers (CCBs) may be useful to diabetics, particularly as part of combination therapy to control BP as well as reduce the risk of cardiovascular disease (CVD) events in diabetics. Angiotensin II receptor blockers (ARBs) are more effective in slowing the progression of chronic kidney disease (CKD) than other antihypertensive regimens. The PQI is a comprehensive tool which is valid and reliable for measuring quality of prescribing in chronic disease like hypertension in Indian settings. PQI can be used for assessment and comparison of quality of prescribing in different clinical settings at different health care levels.

REFERENCES:

REFERENCES:

1. Hassan nb, ismailhc, naing l, conroyrm, abdulrahman ar. Development and validation of a new prescription quality index. Br j clinpharmacol 2010;70: 500-513.
2. Hennessy s, bilker wb, zhou l, weber, brensinger c, wang y. Retrospective drug utilization review, prescribing errors, and clinical outcomes. Jama 2003;290:1494-1499.
3. Lagerlov p, hjortdahl p, saxegaard l, andrew m, matheson i. Structuring prescribing data into traffi c-light categories; a tool for evaluating treatment quality in primary care. Fampract 2001;18: 528-533.
4. Coste j, venot a. An epidemiologic approach to drug prescribing quality assessment: a study in primary care practice in france. Med care 1999;37:1294-1307.
5. Kerr ea, mcglynnea, adams j, keesey j, asch sm. Profi ling the quality of care in twelve communities: results from the cqi study. Health aff (millwood) 2004;23:247-256

RECOMONDED ARTICLES:

Research Journal of Pharmacy and Technology (RJPT) is an international peer-reviewed journal of pharmaceutical sciences. It is indexed/abstracted in ISA, CAS, CAB, Google Scholar, and Scopus.

RNI: CHHENG00387/33/1/2008-TC
DOI: 10.5958/0974-360X

1.3
56th percentile

2021 CiteScore
Powered by Scopus

(https://www.scopus.com/sourceid/21100197160?dgcid=sc_widget_citescore)

Research Journal of Pharmacy and Technology

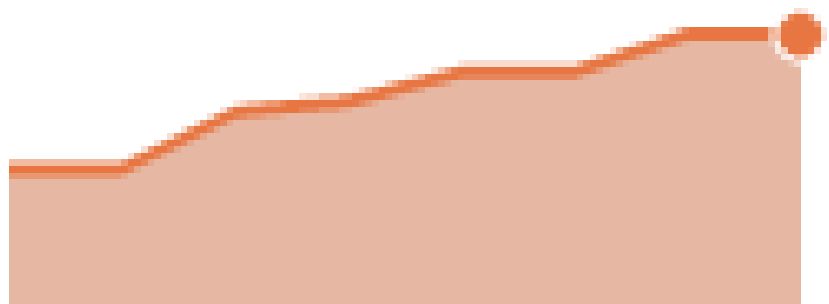
Q2

Pharmacology, Toxicology and Pharmaceutics...

best quartile

SJR 2023

0.27




powered by scimagojr.com

(<https://www.scimagojr.com/journalsearch.php?q=21100197160&tip=sid&exact=no>)

Journal Policies & Information

- Scope of Focus (FocusScope.aspx)
- Informed Consent (InformedConsent.aspx)
- Competing Interests (CompetingInterests.aspx)
- Privacy Policy (PrivacyPolicy.aspx)
- Advertisement Policy (AdvertisementPolicy.aspx)
- Disclaimer (Disclaimer.aspx)
- Plagiarism Policy (PlagiarismPolicy.aspx)
- Publication Ethics (PublicationEthics.aspx)
- Reviewers' Guidelines (ReviewersGuidelines.aspx)
- Review Policy (ReviewPolicy.aspx)
- Correction and Retraction Policy (CorrectionRetractionPolicy.aspx)




RJPT
online

×

RJPT
Hi,

QUICK LINKS


 [SUBMIT ARTICLE \(SUBMITARTICLE.ASPX\)](#)

 [AUTHOR'S GUIDELINES \(DOWNLOADS/INSTRUCTIONS_TO_AUTHOR.PDF\)](#)

 [PAPER TEMPLATE \(DOWNLOADS/PAPER_TEMPLAT.DOC\)](#)


 [COPYRIGHT FORM \(DOWNLOADS/COPYRIGHT TRANSFER FORM.DOCX\)](#)


 [CERT. OF CONFLICT OF INTREST \(DOWNLOADS/CERTIFICATE OF CONFLICT OF INTREST.PDF\)](#)

 [PROCESSING CHARGES \(CHARGESDETAILS.ASPX\)](#)

 [INDEXING INFORMATION \(INDEXED_IN.ASPX\)](#)

LATEST ISSUES

 [SEPTEMBER 2024 \(76\) \(ISSUES.ASPX?VID=17&IID=9\)](#)


 [AUGUST 2024 \(87\) \(ISSUES.ASPX?VID=17&IID=8\)](#)


 [JULY 2024 \(85\) \(ISSUES.ASPX?VID=17&IID=7\)](#)

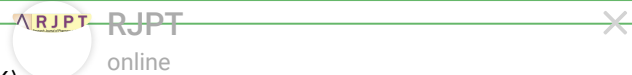
 [JUNE 2024 \(86\) \(ISSUES.ASPX?VID=17&IID=6\)](#)

 [MAY 2024 \(77\) \(ISSUES.ASPX?VID=17&IID=5\)](#)

 [APRIL 2024 \(78\) \(ISSUES.ASPX?VID=17&IID=4\)](#)

 [MARCH 2024 \(77\) \(ISSUES.ASPX?VID=17&IID=3\)](#)

 [FEBRUARY 2024 \(77\) \(ISSUES.ASPX?VID=17&IID=2\)](#)



RJPT
Hi,

POPULAR ARTICLES

(AbstractView.aspx?PID=2020-13-7-74)

Pharmaceutical Incompatibilities: Causes, Types and Major ways of Overcoming in Extemporaneous Medicinal forms

(AbstractView.aspx?PID=2020-13-7-74)

(AbstractView.aspx?PID=2020-13-1-43)

Formulation and Evaluation of Herbal Face Cream

(AbstractView.aspx?PID=2020-13-1-43)

(AbstractView.aspx?PID=2017-10-9-42)

Detection of Food Adulterants in Chilli, Turmeric and Coriander Powders by Physical and Chemical Methods

(AbstractView.aspx?PID=2017-10-9-42)

(AbstractView.aspx?PID=2020-13-4-16)

Formulation and Evaluation of Herbal Lipsticks

(AbstractView.aspx?PID=2020-13-4-16)

(AbstractView.aspx?PID=2017-10-9-19)

Formulation and Evaluation of Aspirin Tablets by Using Different Lubricants in Combination for better Kinetic Drug Release Study by PCP

(AbstractView.aspx?PID=2017-10-9-19)

(AbstractView.aspx?PID=2020-13-3-81)

Regulatory requirements for conducting Clinical Trials in India

(AbstractView.aspx?PID=2020-13-3-81)

(AbstractView.aspx?PID=2019-12-11-80)

Dental Waxes–A Review

(AbstractView.aspx?PID=2019-12-11-80)

(AbstractView.aspx?PID=2013-6-2-15)

Medicinal Plants from Solanaceae Family

(AbstractView.aspx?PID=2013-6-2-15)

(AbstractView.aspx?PID=2016-9-11-11)

Sex determination using the mastoid process using South Indian skulls

(AbstractView.aspx?PID=2016-9-11-11)

(AbstractView.aspx?PID=2014-7-9-14)

The Use of Neem in Oral Health

(AbstractView.aspx?PID=2014-7-9-14)



RJPT
online



RJPT
Hi,

(AbstractView.aspx?PID=2019-12-1-69)
Recent Advances in Preventive Resin Restoration (PRR)
 (AbstractView.aspx?PID=2019-12-1-69)

(AbstractView.aspx?PID=2011-4-9-2)
Formulation and Evaluation of Diclofenac gel
 (AbstractView.aspx?PID=2011-4-9-2)

(AbstractView.aspx?PID=2010-3-3-60)
Evaluation of Ayurvedic Marketed Formulations Asava's and Arista's.
 (AbstractView.aspx?PID=2010-3-3-60)

(AbstractView.aspx?PID=2017-10-12-61)
Mathematical Models in Drug Discovery, Development and Treatment of Various Diseases – A Case Study
 (AbstractView.aspx?PID=2017-10-12-61)

(AbstractView.aspx?PID=2018-11-2-70)
Recent Advancements in Laminates and Veneers in Dentistry
 (AbstractView.aspx?PID=2018-11-2-70)


Recent Articles

Tags

Not Available

ABOUT JOURNAL

Research Journal of Pharmacy and Technology (RJPT) is an international, peer-reviewed, multidisciplinary journal, devoted to pharmaceutical sciences. The aim of RJPT is to increase the impact of pharmaceutical research both in academia and industry, with strong emphasis on quality and originality. RJPT publishes Original Research Articles,



RJPT
online

×

RJPT
Hi,

Short Communications, Review Articles in all areas of pharmaceutical sciences from the discovery of a drug up to clinical evaluation. Topics covered are: Pharmaceutics and Pharmacokinetics; Pharmaceutical chemistry including medicinal and analytical chemistry; Pharmacognosy including herbal products standardization and Phytochemistry; Pharmacology: Allied sciences including drug regulatory affairs, Pharmaceutical Marketing, Pharmaceutical Microbiology, Pharmaceutical biochemistry, Pharmaceutical Education and Hospital Pharmacy.

Read More >>> (AboutJournal.aspx)

VISITORS



Today:

Yesterday:

Total:

[HOME \(HOME.ASPX\)](#) | [ABOUT JOURNAL \(ABOUTJOURNAL.ASPX\)](#) |


[EDITORIAL BOARD \(EDITORIALBOARD.ASPX\)](#) | [SITEMAP \(SITEMAP.XML\)](#)



(<https://tlabssolutions.com/>)

Designed and Developed by:

T-Labs Solutions (<https://tlabssolutions.com/>)

 **RJPT**
online ✕

RJPT
Hi,