

Study of Prescribing Pattern in Pre-Eclampsia and Impact of Patient Education on Patient Adherence to Treatment

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Abstract : Preeclampsia is a form of hypertension that is unique to human pregnancy. It is the new onset of hypertension ($\geq 140/90$ mmHg) with oedema or Proteinuria or both after 20 weeks of gestation. Based on this a non-invasive cross-sectional prospective observational study was performed in the Department of Obstetrics and Gynaecology, at RMMCH, Annamalai University, TamilNadu, for a period of 6 months (November 2015-April 2016). Totally 55 patients in Obstetrics and Gynaecology ward with pre-eclampsia who satisfy the inclusion and exclusion criteria were enrolled. The objectives are to study the prescribing pattern in pre-eclampsia, to observe the prescription for adverse drug reaction(s), if any, to conduct patient education to increase patient adherence to treatment, to assess the impact of patient education. Our study showed that patients belonging to the age group 26-30 and weight between 51-55 kg were predominant with preeclampsia. The study clearly indicates that incidence of preeclampsia is more in primi gravida (49%) and in the third trimester (52.7%) of pregnancy. It was observed that the combination therapy is more likely to be effective treatment regimen than the monotherapy. (Labetolol and calcium supplement being the most prescribed combination (25%) and Labetolol the most prescribed antihypertensive monotherapy (63.6%)). Being the special population, the incidence of ADR was found to be 5.4%. The patients were educated about the disease, medications and various life style modifications. The assessment of outcome showed that there is a significant increase in the patient adherence to the treatment after counseling.

Keywords: Adherence, Hypertension, Patient education, Pre-eclampsia, Prescribing pattern.

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I. Introduction

Preeclampsia is a form of hypertension that is unique to human pregnancy. It is the new onset of hypertension (140/90mmhg or more) with oedema or Proteinuria or both after 20 weeks of gestation. Incidence of preeclampsia in hospital practise varies widely from 3% - 7% : up to 25% of cases develop postpartum , most often within the first four days but sometimes up to six weeks postpartum (A. Jesima Begum, 2007). Hospitalize in all cases. Definitive therapy is to terminate pregnancy. The choice between immediate delivery and expectant management depends on Severity of disease, Condition of mother and foetus, Period of gestation (POG) (STG, third edition). The objective of this study is to understand the prescribing pattern followed, to observe the prescription for ADRs if any, and to educate the patients regarding the disease, medication and the lifestyle modifications. Through such effective provision of pharmaceutical care negative outcomes like unnecessary emergency room visits, hospital admissions and office visits due to drug related problems which are common and costly was reduced.

II. Materials And Methods

This study was conducted in the department of Obstetrics and Gynecology, Rajah Muthiah medical college hospital, Annamalai Nagar, TamilNadu, which is 1260 bedded multi-specialty tertiary care teaching hospital during the period of 2015 to 2016. Required data collected from patient case sheet and recorded in specially designed proforma. The study is ethically approved.

Inclusion Criteria:

Pregnant women with Blood Pressure $>140/90$ mmHg or Diastolic Blood Pressure > 90 mmHg with proteinuria.

Exclusion Criteria:

Patients who could not be followed up.

Patients who are not willing to participate in the study.

Pregnant women with co-morbidities such as Diabetes Mellitus and Oliguria

III. Results

The results were obtained from 55 patients with preeclampsia from the department of obstetrics and gynaecology, who were enrolled into the study after fulfillment of the selection criteria and after obtaining their consent.

TABLE 1: Age Wise Distribution Of Preeclampsia Patients

AGE GROUP IN YEARS	NUMBER OF PATIENTS	PERCENTAGE
18-22	10	18.1%
22-25	18	32.7%
26-30	20	36.3%
31-35	6	10.9%
>35	1	1.8%

FIGURE 1: AGE WISE DISTRIBUTION OF PREECLAMPSIA PATIENTS

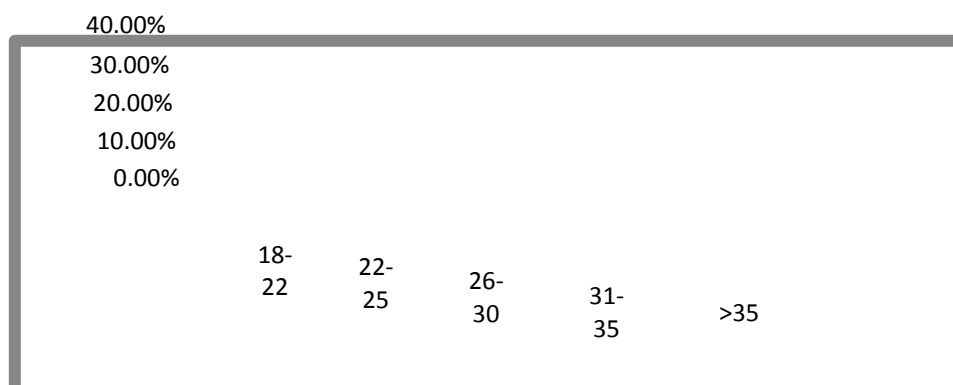


TABLE 2: Weight-Wise Distribution Of Preeclampsia Patients

WEIGHT IN Kg	NUMBER OF PATIENTS	PERCENTAGE
<45	3	5.45%
45-50	7	12.72%
51-55	24	43.63%
56-60	6	11.90%
>60	15	27.2%

Figure 2: Weight Wise Distribution of Preeclampsia Patients

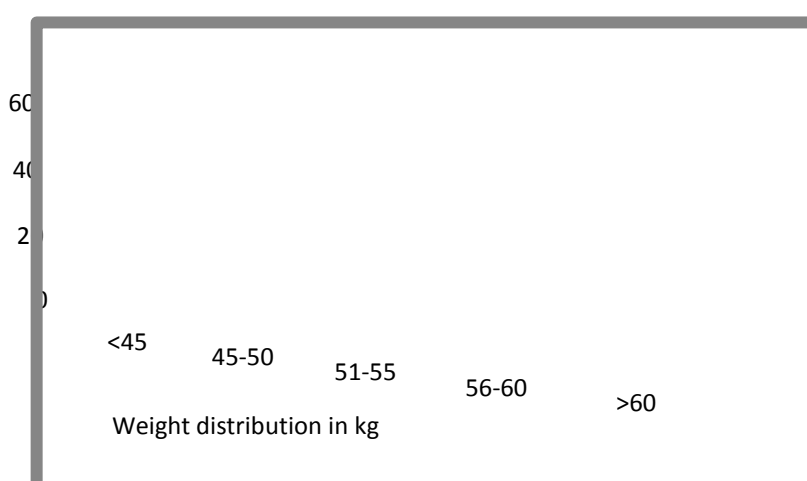


Table 3: Gravida Wise Distribution Of Preeclampsia Patients

GRAVIDA	NUMBER OF PATIENTS	PERCENTAGE
PRIMI	27	49%
SECOND	24	43.6%
THIRD	4	7.27%

Figure 3: Gravida Wise Distribution of Preeclampsia Patients

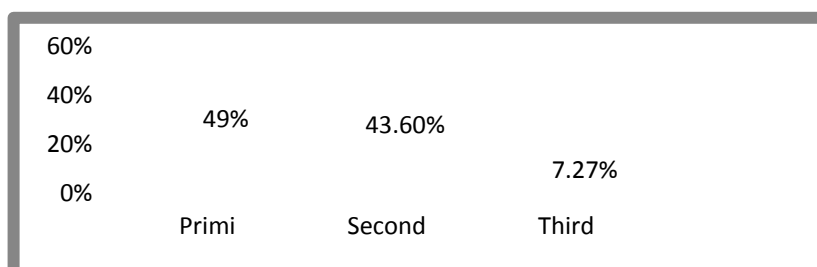


Table 4: Trimester Wise Distribution Of Preeclampsia Patients

TRIMESTER	NUMBER OF PATIENTS	PERCENTAGE
First	0	0%
Second	17	30.9%
Third	29	52.7%
Postpartum	8	14.5%

Figure 4: Trimester Wise Distribution of Preeclampsia Patients



Table 5: Prescribing Pattern In Preeclampsia

DRUG THERAPY	NUMBER OF PATIENTS	PERCENTAGE
Single drugs	27	49.1%
Two drugs	24	43.6%
Three drugs	3	5.5%
More than three drugs	1	1.8%

Figure 5: Prescribing Pattern In Preeclampsia

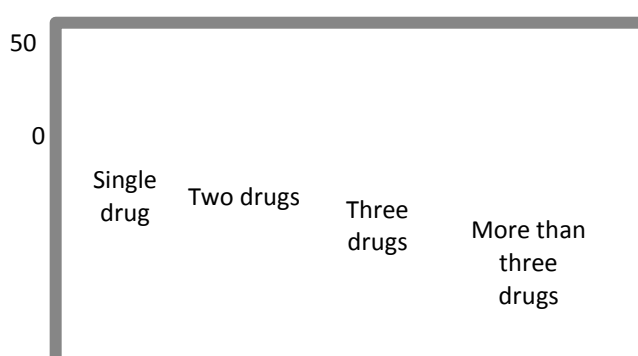


Table 6: Drugs Prescribed In Preeclampsia

DRUGS	NUMBER OF PATIENTS	PERCENTAGE
Antihypertensive Agents	55	100%
Anticonvulsants (Phenytoin)	5	9.1%
Calcium supplement	16	29.1%
Aspirin	8	14.5%

Table 7: Prescribing Pattern of Antihypertensive Drugs

NAME OF THE DRUG	NUMBER OF PATIENTS	PERCENTAGE
Labetolol	35	63.6%
Nifedipine	18	32.7%
Methyldopa	2	3.6%

Figure 6: Prescribing Pattern of Antihypertensive Drugs

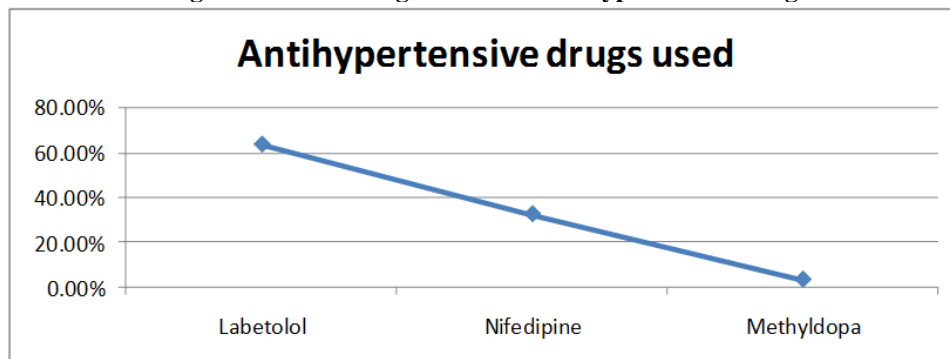


Table 8: Drug Use Pattern In Combination

COMBINATIONS	NUMBER OF PATIENTS	PERCENTAGE
Labetolol + Calcium supplement	7	25%
Nifedipine + Calcium supplement	6	21.4%
Nifedipine + Phenytoin	2	7.1%
Aspirin + Labetolol	6	21.4%
Labetolol + Nifedipine	3	10.7%
Nifedipine + Phenytoin + Calcium supplement	1	3.6%
Labetolol + Nifedipine + Phenytoin	1	3.6%
Labetolol + Nifedipine + calcium	1	3.6%
Labetolol + Nifedipine + Phenytoin + Calcium supplement	1	3.6%

Table 9: Drugs Used As Monotherapy

DRUGS	NUMBER OF PATIENTS	PERCENTAGE
Labetolol	16	59.3%
Nifedipine	7	25.9%
Methyldopa	2	7.4%
Aspirin	2	7.4%

Figure 7: Comparison of Treatment Regimen

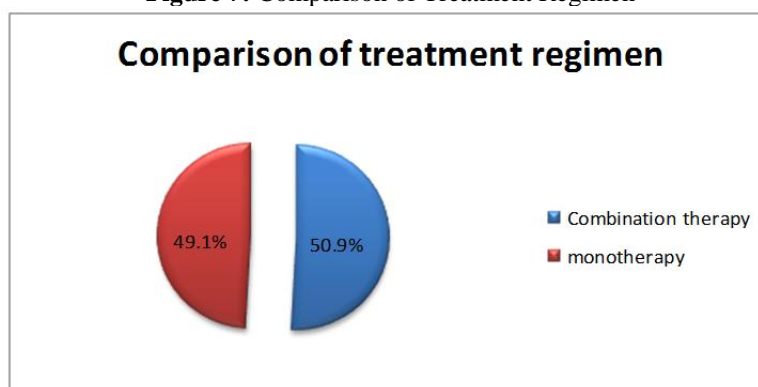


TABLE 10: OBSERVED ADRS

CONDITIONS	NUMBER OF PATIENTS	PERCENTAGE
Drowsiness	2	3.6%
Headache	1	1.8%

Figure 8: Observed Adverse Drug Reactions

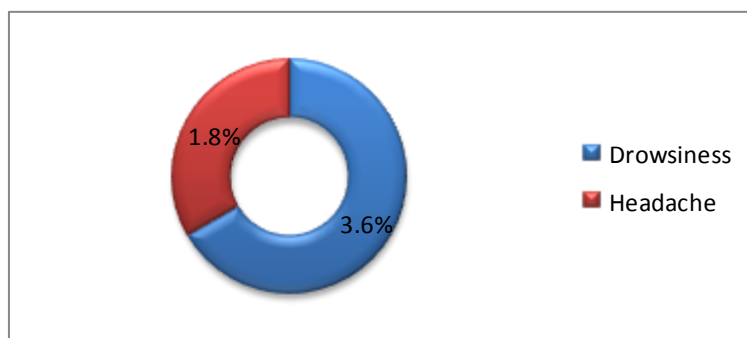


Table 11: Incidence of Adverse Drug Reaction

TOTAL NUMBER OF PATIENTS	PATIENTS WITH ADR
55	3

Figure 9: Incidence of ADR

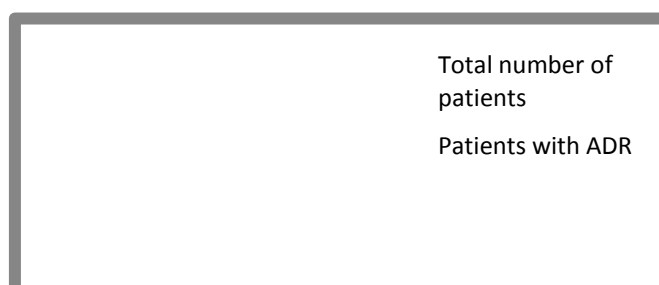


TABLE 12: MEDICATION ADHERENCE IN ENROLLED PATIENTS (N=55)

Number of patients	Pre-counselling			Post-counselling		
	Low(3-4) (non-adherent)	Medium (1-2) (partially adherent)	High(0)(fully adherent)	Low(3-4) (non-adherent)	Medium (1-2) (partially adherent)	High(0)(fully adherent)
	30	24	1	8	32	15
Percentage (%)	54.54	43.63	1.8	14.54	58.18	27.27

Figure 10: Medication Adherence In Enrolled Patients

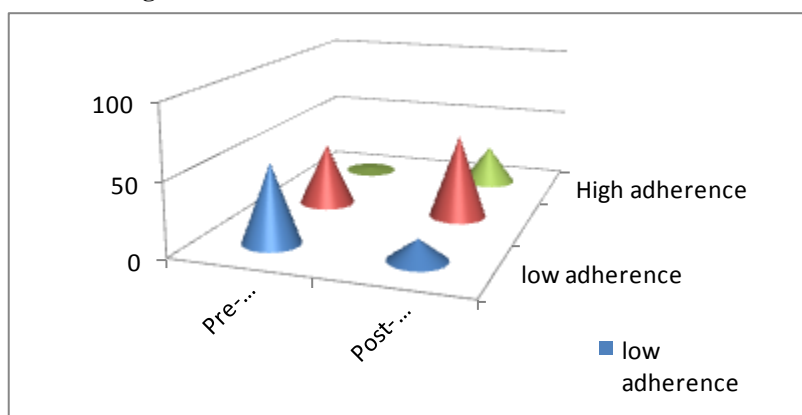


Table 13: Statistical Analysis Of Data Using Mann-Whitney Rank Sum Test
(level of significance = 0.05)

Group	Number	Missing	Median	25%	75%
Pre-counseling	55	0	2.000	2.000	3.000
Post- counseling	55	0	1.000	0.000	2.000

IV. Conclusion

The study is to understand the prescribing pattern in pre-eclampsia and to educate the patients on the disease, medications and the lifestyle modifications, carried out in 55 patients from the department of Obstetrics and Gynecology, RMMCH. The aim of the study is to understand the prescribing pattern in pre-eclampsia and to assess the impact of patient education on patient adherence to treatment.

Patient demographic characteristics:

Our study shows that the majority of patients belong to the age group of 26-30 years (36.3%) and with body weight within the range of 51-55kg are more likely to develop the complication (i.e., 43.6% of the population) (Erika Ota *et al.*, 2014). This study revealed that preeclampsia is more prevalent among the primi gravida with a distribution of 49% in the study population (Sonia Hernandez-Diaz *et al.*, 2009).

Study of prescribing pattern:

Out of 55 patients enrolled for our study, 28 patients were prescribed with more than one drug, indicating that the use of combination therapy will provide greater efficacy, fewer side effects and greater convenience than can be achieved with monotherapy (Jangra sarita *et al.*, 2012). Further, this study shows that Methyldopa, Labetolol and Nifedipine are the antihypertensives prescribed with Labetolol (β adrenoceptor blocker) category is the most prescribed (63.6%) antihypertensive agent as it is highly efficacious during pregnancy (Dr. Deepanjali Lomte *et al.*, 2015). The comparison of various treatment protocols followed in our hospital shows that, combination therapy is slightly preferred over monotherapy (in 50.9% of cases)³.

Adverse Drug Reaction:

The safety monitoring was performed with the help of ADR reporting form. In the study population, only 3 ADRs were reported (5.4%).

Impact of patient counseling:

The patients were educated about the disease, medication and various life style modifications. They were also counselled about the importance of adherence and the possible outcomes of non-adherence. 54.54% of patients registered with low medication adherence in the first follow-up and after continuous follow-up, the medication adherence of patients improved from low to medium. This was measured using Morisky medication Adherence Questionnaire (MSQ 4). The assessment of patient adherence to treatment before and after counseling was done using statistical tool (MANN-WHITNEY RANK SUM TEST) and statistically significant difference ($P \leq 0.001$) was observed.

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