Research Article
CODEN (USA): IJPLCP

ISSN: 0976-7126
Jaiswal & Dwivedi, 12(2):48-52, 2021

International Journal of Pharmacy & Life Sciences
Open Access to Researcher

Demography and Socio-economic studies on Anti-malarial drugs reported in Dhar District of Madhya Pradesh

Babita Jaiswal* and Sumeet Dwivedi

Faculty of Pharmacy, Oriental University, Indore (M.P.) – India

Article info

Received: 29/01/2021

Revised: 24/02/2021

Accepted: 26/02/2021

© IJPLS

www.ijplsjournal.com

Abstract

Malaria is a very common and life threatening disease in many parts of World including India. Malaria is very often in many tropical and subtropical countries. Malaria is caused by the protozoa, a parasite Plasmodium. Approximately about 75% of world population every year suffers from these diseases from east to west and north to south. Every year many travelers across the world suffer with malaria, a study revealed that about 10,000 are reported to become ill with malaria.The present investigation was carried out in the Dhar, Madhya Pradesh, India, The study was made to the patient who got treatment from the hospital and drug treatment and results were evaluated. From the data obtained it was concluded that age 11-20 were mostly affected by the malaria.

Key words: Malaria, Dhar, Demography

Introduction

In human malaria is caused by five different species of Plasmodium viz., *Plasmodium vivax, Plasmodium falciparum, Plasmodium malariae, Plasmodium ovale* and *Plasmodium knowlesi.* Out of all these five different species of Plasmodium, *Plasmodium malariae* is most common while *Plasmodium falcifarum* is most dangerous with highest rates of complications and mortality. [1-2]

The malaria parasite is transmitted by the female Anopheles mosquitoes. The malaria occurs when these mosquito bites mainly between dusk and dawn during night mostly. [3]

Malaria is an acute febrile illness having an incubation period of about 7 days or longer in some cases. Out of five *Plasmodium* species which causes malaria *P. falcifarum* is most dangerous. In India *P. malariae* is more often which causes malaria.

The clinical symptoms include chill fever, headache, muscle cramps, weakness, cough, diarrhoea and abdominal pain. Other symptoms include acute renal failure, pulmonary oedema, convulsions and circulatory collapse; the same may be followed by coma and death. [4-12]

Material and Methods

Selection of Diseases

Malaria is a very common and frequent disease in a developing country like India. Approximately every year nearly 40-45% of human beings suffer from the disease and among then nearly 15-18 % have ADRs, therefore the present disease was selected. [13-15]

***Corresponding Author**
E.mail: herbal0914@rediffmail.com

ISSN: 0976-7126
Jaiswal & Dwivedi, 12(2):48-52, 2021

Selection of study area

Dhar district of Madhya Pradesh, India is selected for the present investigation. Also, the disease in very frequent in and around Dhar district due to various factors among which un hygienic is one of the prime cause and as per that data obtained from the Dhar 3-8 patients were reported to have malaria every day, hence for the present investigation Dhar was chosen. [13-15]

Selection of study period

The present study was conducted for a period of 3 months (September' 2020 to December' 2020) in Dhar, Madhya Pradesh, India. [13-15]

Selection of study population

Three hundred eighty three (383) patients were selected for the present investigation hospitalized in medical ward receiving anti-malarial drugs for the treatment were enrolled in this study. [13-15]

Study design & Design of questioner

The study was hospital based prospective observation study. Patients were followed up for the period of one month after receiving the drug treatment. [16-19]

In this study the demographic and socio-economic studies were reveled out.

Results and Discussion

Malaria is a very common and frequent disease. Dhar district of Madhya Pradesh was chosen for the present investigation and data regarding the present study was obtained after a proper questioner developed.

Demographic responses

Total 383 questionnaires i.e., case sheet were administered out of which 267 were returned completely filled. Out of 267, 193 ADRs were found and reported from 89 female patients and 104 male patients during the study period for present investigation. Table 1 and Figure 1 reveal the demographic responses of ADR in study population. Table 2 and Figure 2 demonstrated the Socio-demographic characteristics of study population.

Table 1: Demographic responses of ADR of study population (n=383)

Characteristics	ADR	Non-ADR	Total	Percentage
ADR Status	193	74	267	69.71
Percentage	72.28	27.21	-	100
Male Patient	104	43	147	55.05
Female Patient	89	31	120	44.94

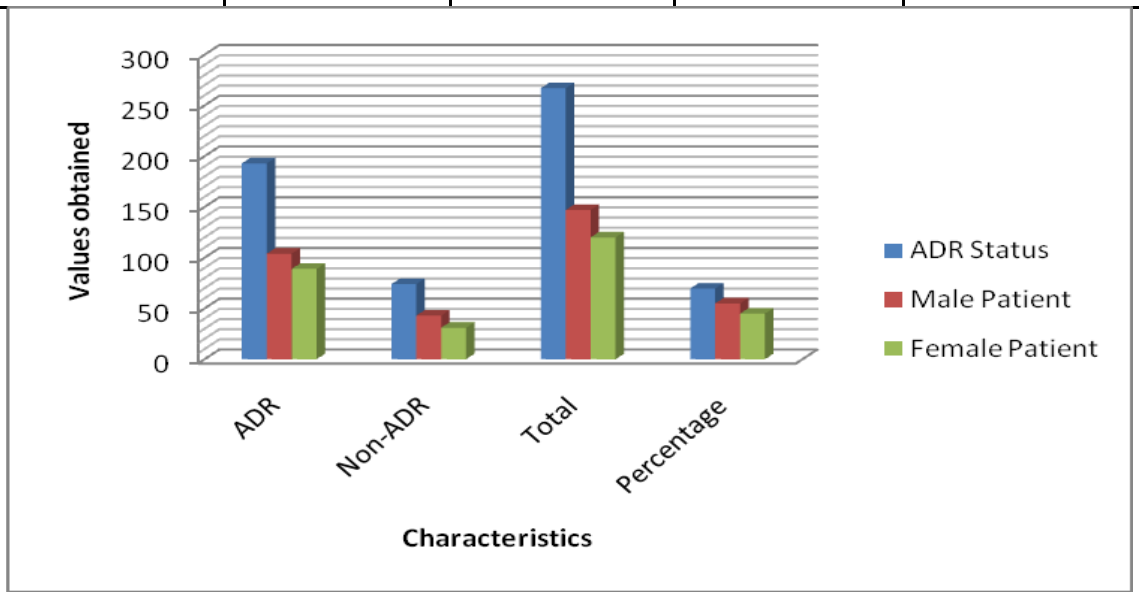

Fig. 1 : Demographic responses of ADR of study population

ISSN: 0976-7126
Jaiswal & Dwivedi, 12(2):48-52, 2021

Table 2: Socio-demographic characteristics of study population (n=193)

Characteristics	Male Patient	Female Patient
ADR	104	89
Percentage	53.88	46.11

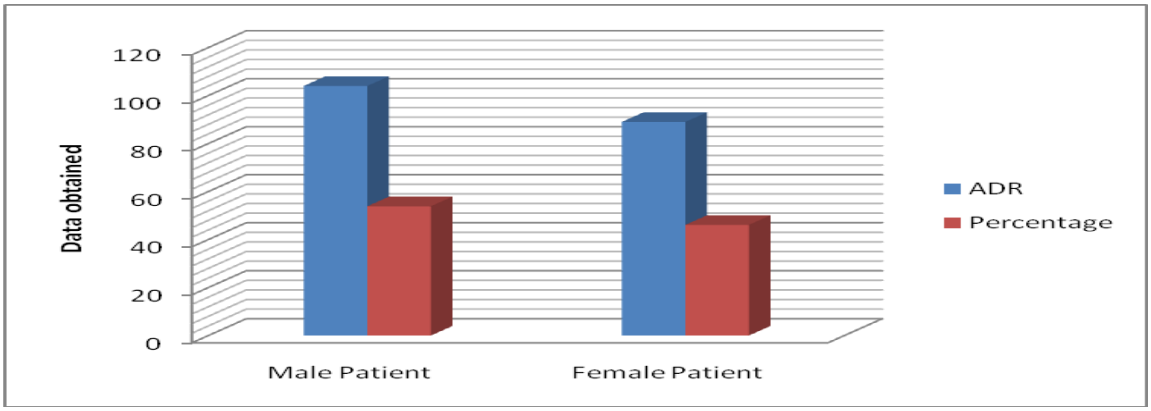

Fig. 2 : Socio-demographic characteristics of study population

Different age groups of patient were pointed out in the present investigation for both the sexes (male and female). The data so obtained are presented in table 3. The results obtained indicate that the majority of the ADRs observed in the age group of 11-20 in male and females. Age wise distribution of ADR was mentioned in table 3 and figure 3.

The drugs viz., Quinine, Chloroquine, Artesunate, Proguanil, Mefloquine, Sulphadoxine + Pyrimethamine, Atavaquone + Proguanil were prescribed to the 193 patients and the drug distribution over male and female were presented in table 4. The data obtained (table 4 and figure 4) indicate that the most prescribed drug is Chloroquine followed by Artesunate

Table 3: Age wise distribution of ADRs (n=193)

Age Groups (Years)	Male	Percentage	Female	Percentage	Total Percentage (M+F)
0-10	28	14.50	21	10.88	25.38
11-20	41	21.24	32	16.58	37.82
21-40	19	9.84	12	6.21	16.05
41-80	12	6.21	18	9.32	15.53
≥80	4	2.07	6	3.10	5.17

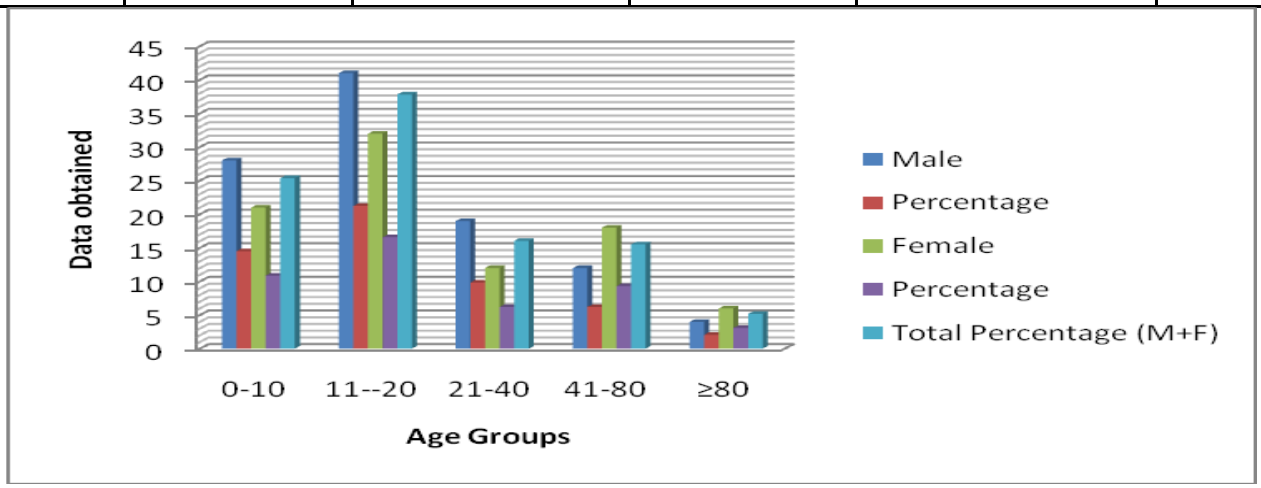

Fig. 3: Age wise distribution of ADRs

ISSN: 0976-7126
Jaiswal & Dwivedi, 12(2):48-52, 2021

Table 4: Anti-malaria drug treatment in hospital (n=193)

Treatment Given	Male	Percentage	Female	Percentage	Total	Percentage
Quinine	18	9.32	15	7.77	33	17.09
Chloroquine	32	16.58	29	15.02	61	31.60
Artesunate	27	13.98	21	10.88	48	24.87
Proguanil	6	3.10	3	1.55	9	4.66
Mefloquine	11	5.69	13	6.73	24	12.43
Sulphadoxine + Pyrimethamine	7	3.62	6	3.10	13	6.73
Atavaquone + Proguanil	3	1.55	2	1.03	5	2.59

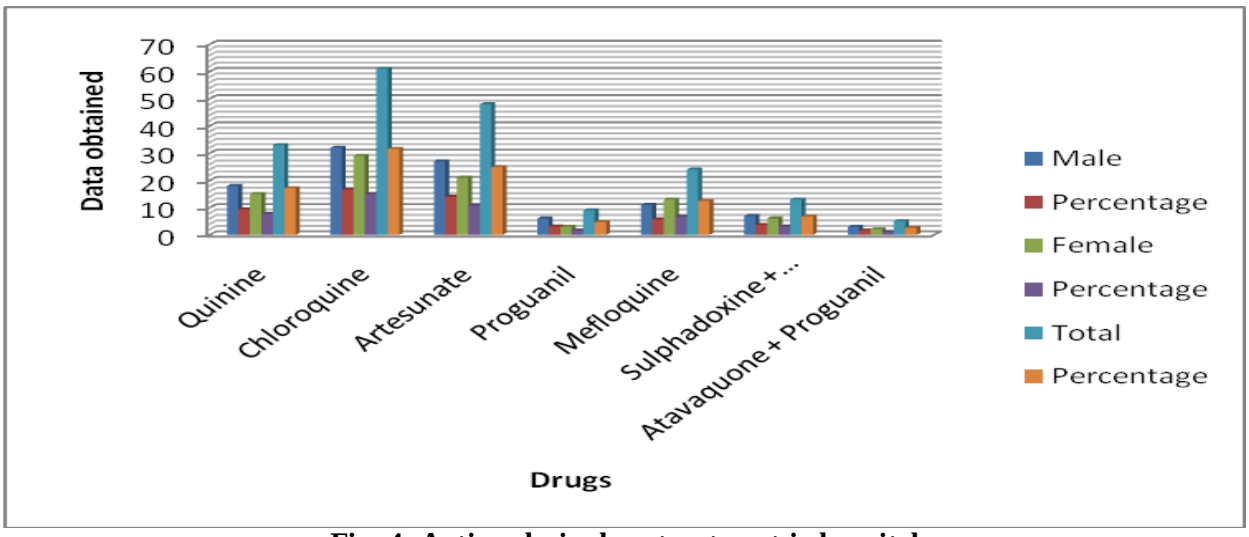

Fig. 4: Anti-malaria drug treatment in hospital

Conclusion

The present investigation was carried out in the Dhar, Madhya Pradesh, India, The study was made to the patient who got treatment from the hospital and drug treatment and results were evaluated. From the data obtained it was concluded that age 11-20 were mostly affected by the malaria.

References

1. Caraballo H (2014). "Emergency department management of mosquito-borne illness: Malaria, dengue, and west nile virus". Emergency Medicine Practice. 16 (5).
2. "Malaria Fact sheet N°94". WHO. March 2014. Archived from the original on 3 September 2014.
3. World Malaria Report 2017 (PDF). WHO. 2017. ISBN 978-9241565523.
4. Nadjm B, Behrens RH (2012). "Malaria: An update for physicians". Infectious Disease Clinics of North America. 26 (2): 243–59.
5. Organization, World Health (2010). Guidelines for the treatment of malaria (2nd ed.). Geneva: World Health Organization. p. ix. ISBN 978-9241547925.
6. WHO (2014). World Malaria Report 2014. Geneva: World Health Organization. pp. 32–42. ISBN 978-9241564830.
7. Gollin D, Zimmermann C (August 2007). Malaria: Disease Impacts and Long-Run Income Differences (PDF) (Report). Institute for the Study of Labor.
8. Worrall E, Basu S, Hanson K (2005). "Is malaria a disease of poverty? A review of the literature". Tropical Health and Medicine. 10 (10): 1047–59.
9. Greenwood BM, Bojang K, Whitty CJ, Targett GA (2005). "Malaria". Lancet. 365(9469): 1487–98.

10. Fairhurst RM, Wellems TE (2010). "Chapter 275. Plasmodium species (malaria)". In Mandell GL, Bennett JE, Dolin R. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 2 (7th ed.). Philadelphia: Churchill Livingstone/Elsevier. pp. 3437–62. ISBN 978-0443068393.
11. Bartoloni A, Zammarchi L (2012). "Clinical aspects of uncomplicated and severe malaria". Mediterranean Journal of Hematology and Infectious Diseases. 4 (1): e2012026.
12. Beare NA, Taylor TE, Harding SP, Lewallen S, Molyneux ME (2006). "Malarial retinopathy: A newly established diagnostic sign in severe malaria". American Journal of Tropical Medicine and Hygiene. 75 (5): 790–97.
13. Shrivastava M, Uchit G, Chakravarti A, Joshi G, Mahatme M, Chaudhari H. Adverse drug reactions reported in Indira Gandhi Government Medical College and Hospital, Nagpur. J Assoc Physicians India 2011; 59:296-9.
14. Sriram S, Ghasemi A, Ramasamy R, Devi M, Balasubramanian R, Ravi TK, et al. Prevalence of adverse drug reactions at a private tertiary care hospital in south India. J Res Med Sci 2011; 16:16-25.
15. Doshi MS, Patel PP, Shah SP, Dikshit RK. Intensive monitoring of adverse drug reactions in hospitalized patients of two medical units at a tertiary care teaching hospital. J Pharmacol Pharmacother 2012;3:308-13.
16. Arulmani R, Rajendran SD, Suresh B. Adverse drug reaction monitoring in a secondary care hospital in South India. Br J Clin Pharmacol 2008; 65:210-6.
17. Aagaard L, Strandell J, Melskens L, Petersen PS, Holme Hansen E. Global patterns of adverse drug reactions over a decade: Analyses of spontaneous reports to VigiBase™. Drug Saf 2012; 35:1171-82.
18. Sultana J, Cutroneo P, Trifirò G. Clinical and economic burden of adverse drug reactions. J Pharmacol Pharmacother 2013; 4 Suppl 1:S73-7.
19. Lihite RJ, Lahkar M. A study on cutaneous adverse drug reactions in ADR monitoring centre of tertiary care hospital, Guwahati. J Appl Pharm Sci 2013; 3:78-81.

Cite this article as:
Jaiswal B. and Dwivedi S. (2021). Demography and Socio-economic studies on Anti-malarial drugs reported in Dhar District of Madhya Pradesh, *Int. J. of Pharm. & Life Sci.*, 12(2): 48-52.

Source of Support: Nil
Conflict of Interest: Not declared
For reprints contact: ijplsjournal@gmail.com