Summer Training at
Plasma Gen Biosciences,
Bangalore
(April-June 2013)

STUDY ON HYPER-IMMUNE PLASMA PROTEINS IN INDIANS TIER 1 AND TIER 2 CITIES

By
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Under the guidance of
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Post Graduate Diploma in Pharmaceutical Management
2012-2014

Institute of Health Management Research,
Jaipur
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Certificate

This to certify that Sanchit Rajawat student of Post Graduate Diploma in Pharmaceutical Management (PGDPM) from Institute of Health Management Research, Jaipur, Batch 4th has successfully undergone his summer training in PlasmaGen Biosciences, Bangalore and has done projects on:

- "Study on Hyper-Immune plasma proteins in Indians Tier 1 and Tier 2 Cities".

The candidate has successfully carried out the mentioned studies assigned during his summer training from 26 April 2013 – 15 June 2013 and his approach towards the study was sincere, scientific and analytical.

We wish him success in all his future endeavors.

Prof. Seema Mehta

Assistant Professor
IHMR, Jaipur

Dr. Ashok Kaushik

Dean Academics and Student Affairs,
IHMR, Jaipur

ACKNOWLEDGEMENT

“Successful passage and outcome of every work comes with dedication determination and team work. All these turn futile in the absence of visionary guidance.”

I wish to take this opportunity to convey my sincere gratitude to all those who has helped me in the successful completion of this project.

My heartiest thanks to **Miss. Apeksha Jaiswal** and **Mr. Falak Shah** our project assistance for carrying out the project, without whose constant guidance, co-operation and encouragement my entire project would have remained a distant dream.

I am extremely grateful to my college mentor, **Dr. Seema Mehta** for her guidance and support during the project.

I am also thankful to **Mr. Dalbir singh**, the placement coordinator of our institute for giving me an opportunity to work with PlasmaGen Biosciences.

My heartiest thanks to **PlasmaGen Biosciences** team for mailing and calling me from time to time and keeping us update with all the latest updates and instructions on behalf of the company.

I would also like to express my gratitude and thanks to all the doctors for giving me such attention and time.

Last but not least, I would like to thanks my mother, brother, friends and all my well-wishers for their support and guidance in the successful completion of the project.

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CHAPTER-1 EXECUTIVE SUMMARY

A group of plasma products, "Hyperimmune globulins", are used to treat patients suffering from various diseases like hepatitis B, rabies, tetanus, hemolytic disease of the new born (HDN) etc. These products have a complex manufacturing process because they are prepared from plasma collected from donors with high antibody levels against these diseases. Unfortunately, India doesn't have a facility to collect such hyperimmune plasma and hence we have to be strictly dependent upon import of these products. These products face various issues like poor clinical awareness, high prices, shortage of supply, inconsistent availability etc. To better understand the ground reality of hyperimmune plasma products in India, PlasmaGen Bioscience conduct a detailed scientific/technical and marketing study titled, "Availability and Usage of Hyper immune plasma proteins in Tier I and Tier II cities in India".

This project would enable Plasmagen to understand the public health aspect and the market dynamics of Hyperimmune proteins in India and easily determine the health perspective on the availability, affordability, safety, consumption pattern and market potential of each product.

The main purpose of this study would be to evaluate

- Awareness about hyper-immune plasma proteins in Tier I and Tier II cities.
- Gap analysis of hyper-immune plasma proteins.
- Factors affecting the growth of hyper-immune plasma protein market in Tier I and Tier II cities.
- What will promote the usage of these products in Tier I and Tier II cities.

In my market survey on doctors of reputed private and government hospitals throughout the central region of India (Indore, Bhopal, Jabalpur, Ujjain, Satna, Ratlam), all the response I collected from the doctor it was evident that availability is not same in all cites and not satisfactory for all plasma product. Doctors are using other alternative and vaccine because of price and availability so conception rate is very less for plasma product. Most of doctor not specific for particular brand it's depend on availability of that product. Doctor unanimously

said that availability, awareness, cost efficiency and aggressive marketing is required regarding plasma product.

CHAPTER-2 ABOUT THE PROJECT

2.1 PROBLEM STATEMENT

GAP analysis demand and supply of hyper immune proteins in the Indian plasma product industry.

Though, India has made very impressive progress in many areas of development including medical sciences, but, timely availability of safe blood and blood products at an affordable price is still a very big challenge in India. Access to plasma protein therapy faces various issues like poor clinical awareness, high prices, shortage of supply, inconsistent availability.

With an in depth market survey on the plasma market I seek to determine the public health perspective on the availability, affordability, safety, consumption pattern and market potential of each plasma product in Indian Tier I and Tier II Cities.

2.2 RESEARCH OBJECTIVES

For each category of product:

- To identify level of awareness about hyperimmune products
- To analyse public health perspective of hyper immune products in the regions.
- To find out the number of diagnosed cases in the given region.
- To understand the disease management by doctors
- To analyze whether the existing demand for the products are fulfilled.
- To identify Perception of doctors in these regions regarding the hyper immunes.
- To find out factors affecting the growth of hyperimmune plasma protein market in Tier I and Tier II cities
- To determine the factors that would promote usage of these products in Tier I and Tier II cities

CHAPTER-3 RESEARCH METHODOLOGY

The project all about conducting a survey on doctor and determine the public health perspective on the availability, affordability, safety, consumption pattern and market potential of each plasma product. This data was recorded, analysed and interpreted within the scope of the given objective.

3.1 AREA

CITY	HOSPITALS COVERED
INDORE	MISSION HOSPITAL, CHL HOSPITAL, GOKULDAS, BOMBAY HOSPITAL, BHANDARI, SYNERGY HOSPITAL, MAYANK HOSPITAL, MEDICARE HOSPITAL
BHOPAL	SULTANIA JANANA HOSPITAL, CENTRAL HOSPITAL AND RESEARCH CENTRE, MANYA HOSPITAL, CHIRAYU HOSPITAL, MAX CARE HOSPITAL, GANDHI MEDICAL COLLEGE, SILVER LINE HOSPITAL, INDRA GANDHI HOSP
JABALPUR	SILVER OAK HOSPITAL, CHIRANJIV CHILDREAN HOSPITAL, NATAJI SUBHASH CHANDRA MEDICAL COLLEGE, OMEGA HOSP, BOMBAY HOSPITAL AND RESEARCH CENTARE, JAMDAR HOSPITAL, NATIONAL HOSPITAL, JABALPUR HOSPITAL AND RESEARCH CENTER
UJJAIN	BIDLA HOSPITAL, PUSHPA MISSION HOSPITAL, CHL MEDICAL CENTARE,GOVTERMENT CHILDREANS HOSPITAL, PATIDAR HOSPITAL, DISTRICT HOSPITAL
SATNA	M.P.BIRLA HOSPITAL, AYSHMAN HOSPITAL, DISTRICT HOSPITAL, GANDHI CHILDREAN'S HOSPITAL, NAHAR NURSING HOME, GOVERMENT CHILDREAN HOSPITAL
RATLAM	DISSTRICT HOSPITAL, GOVERMENT CHILDREN HOSPITAL, ASHIRWAD NURSING HOME, ANKOOR CRITICAL CARE, MEHRA NURSING HOME, CHL-JAIN DIWAKER, GET WELL HOSPITAL

3.2 RESEARCH DESIGN

Research design is a total plan or strategy of a proposed research. Descriptive research method was used.

3.3 SAMPLING FRAME

3.3.1 TARGET POPULATION:

The doctor who are aware about plasma products were the respondents of the questionnaire and the doctor selected were of reputed government and private hospital.

The main specialties of doctors interviewed were-

PRODUCT	TARGET CUSTOMER
Anti D Ig	Gynecologists, Pediatricians, Neonatologists, Medical oncologists, Hematologists
Anti Hep B Ig	Pediatrics, Gynecologists, Intensivist, Hepatologist, Gastroenterologist
Anti Tet Ig	General physicians, Pediatrics, Emergency ward doctor, BAMS/BHMS
Anti Rab Ig	General physicians, Pediatrics, Emergency ward doctor, BAMS/BHMS

3.3.2 SAMPLE SIZE:

Total 138 doctor were visited and the doctor who are aware about plasma products were the respondents of the questionnaire are actual sample size was 120 (different for each product on the basis of usage and popularity of the product)

3.3.3 SAMPLING TECHNIQUE:

Purposive sampling is used for this study.

Purposive because the specialities of doctor and objective of study were pre defined.

3.4 DATA COLLECTION TOOLS AND TECHNIQUE:

Semi Structured questionnaire that include both open ended and close ended questions was designed considering the various factors identified, so that the data collected would be in compliance with the information needed.(Copy Enclosed in annexure)

Interviews were conducted which were optimal for collecting data on individuals personal perspectives, and experiences.

CHAPTER-4 ANALYSIS AND INTERPRETATION OF DATA

Data obtained from the questionnaire was performed in Microsoft office excel 2007 and coding method was used for the purpose of data entry.

Total 120 doctors are taken as sample size, which are aware about plasma products were the respondents of the questionnaire.

In out of 120 doctors, 32 doctors are aware about plasma product but not use any type of plasma product remaining 88 are used plasma product.

CITY WISE BREAKUP OF DOCTORS

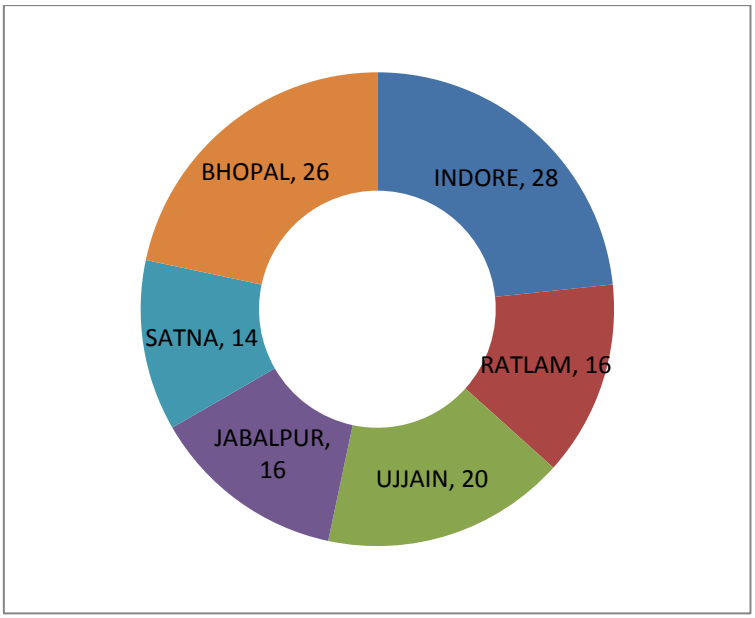


Fig.1 source of questionnaire analysis

4.1 DATA ANALYSIS FOR HEPATITIS B IMMUNOGLOBULIN

For survey on hepatitis b immunoglobulin, 88 doctors were interviewed from different parts of territory.

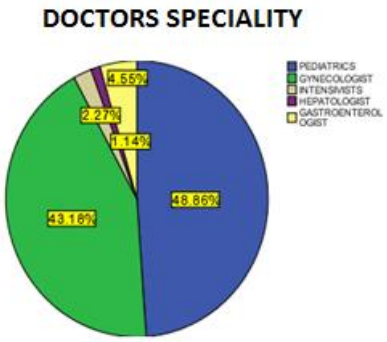


Fig.2- Source of questionnaire analysis

1. Frequency of usage for anti-hepatitis b ig.

Fig. 3 shows usage of hepatitis b ig (city wise), in all city minimum 70% respondent doctor used hepatitis b ig.

Fig. 4 shows pattern of frequency used by doctor in term of percentage, this indicate prescribing pattern of hepatitis b ig city wise.

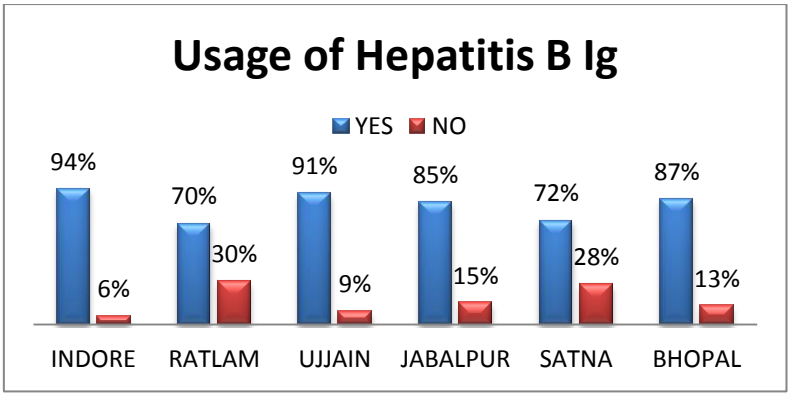


Fig.3-Source questionnaire analysis Q.1

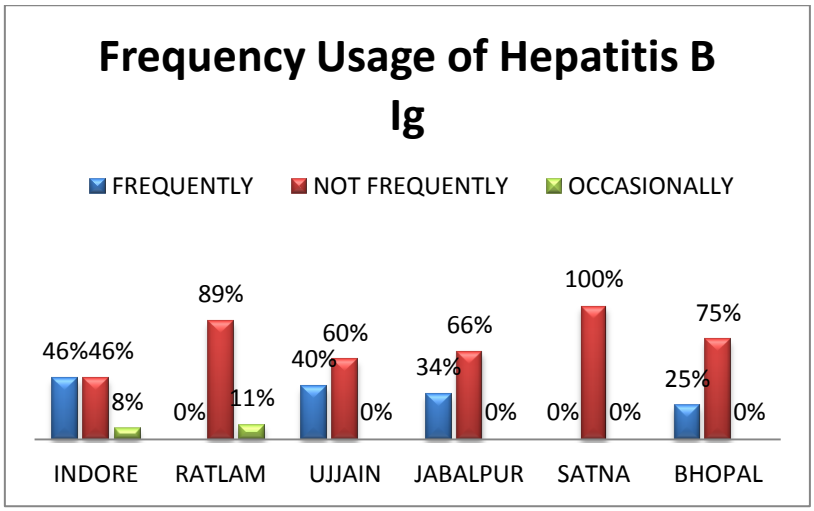


Fig.4- Source of questionnaire analysis Q.1

2. Hepatitis-B Ig accessibility for doctors.

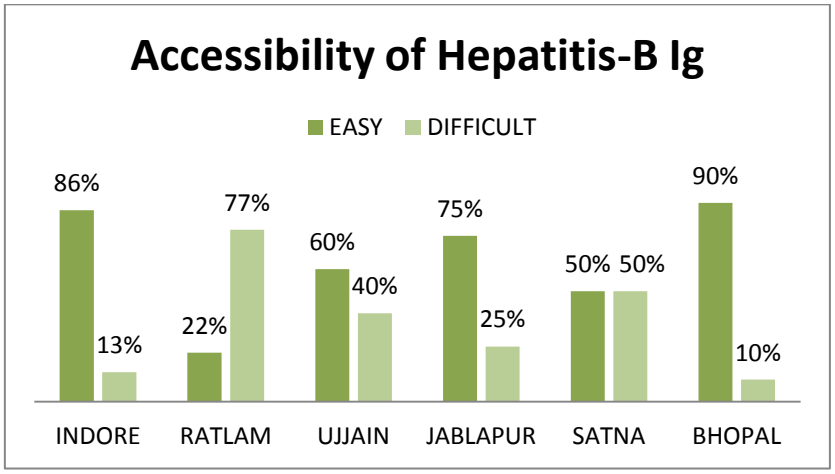


Fig.5- Source of questionnaire analysis Q.2

Fig.5 shows, how easy or difficult it is to get these products for doctor, in ratlam and satna city availability of these products are very difficult.

3. Hepatitis-B diagnostic cases and percentage of patients who can be administered Hepatitis-B ig.

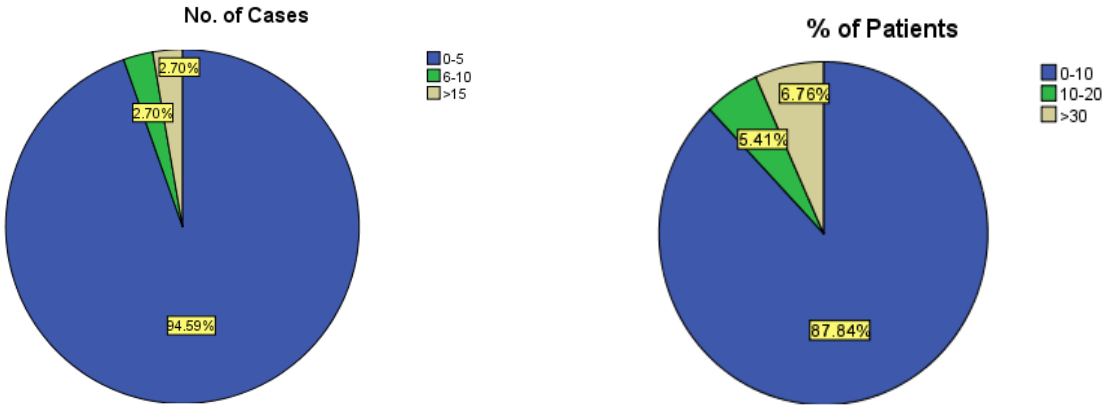


Fig. 6, 7- Source of questionnaire analysis Q.3

Fig. 6 & 7 shows number of cases and percentage of patients who can be administered hyperimmune globulin in overall percentage form most of doctors saw 0-5 cases per month. In case of hepatitis b ig most of the doctors said that 0-10% patients are administered with hepatitis b ig.

4. Duration of treatment (Disease Management by Doctors)

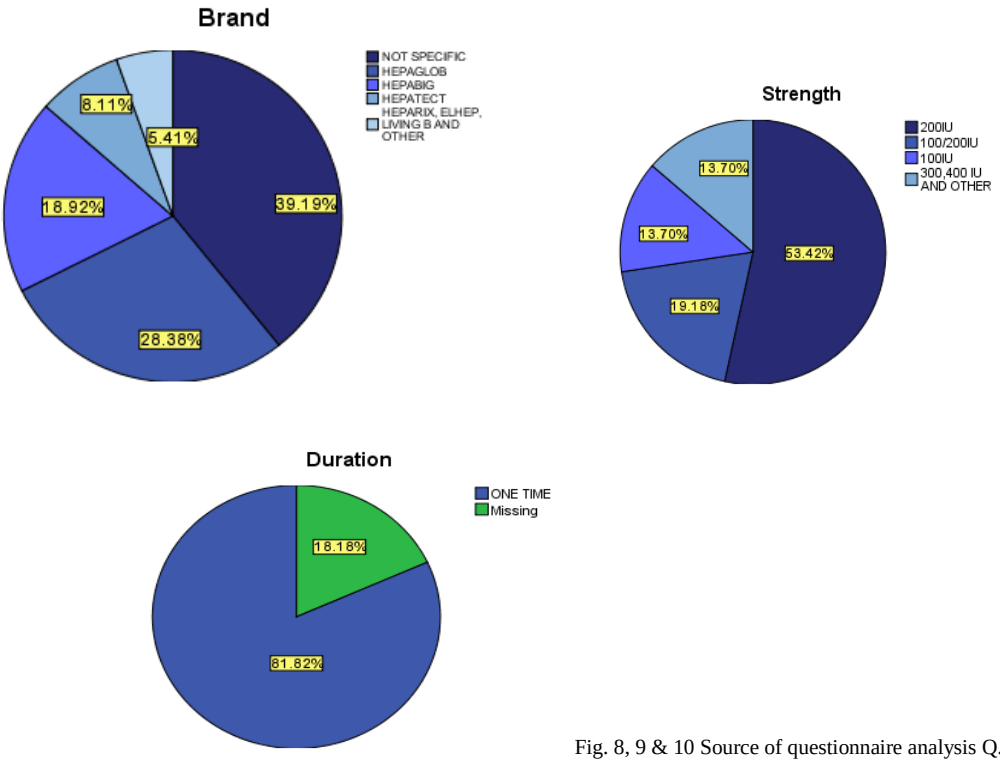


Fig. 8, 9 & 10 Source of questionnaire analysis Q.4

Fig. 8, 9 & 10 shows overall scenario of all city, brand preference, strength and dose used by doctor in term of percentage. Most of the doctors do not go for specific or particular brand it solely depend on availability, 200IU and then 100 IU strength is used by doctors in maximum cases as a single dose.

Around 40% of doctors who are not specific for any brand can be very potential market and great opportunity for plasmagen.

All doctors prescribed an average of one vial per month and as an alternative most of the doctors used hepatitis b vaccines.

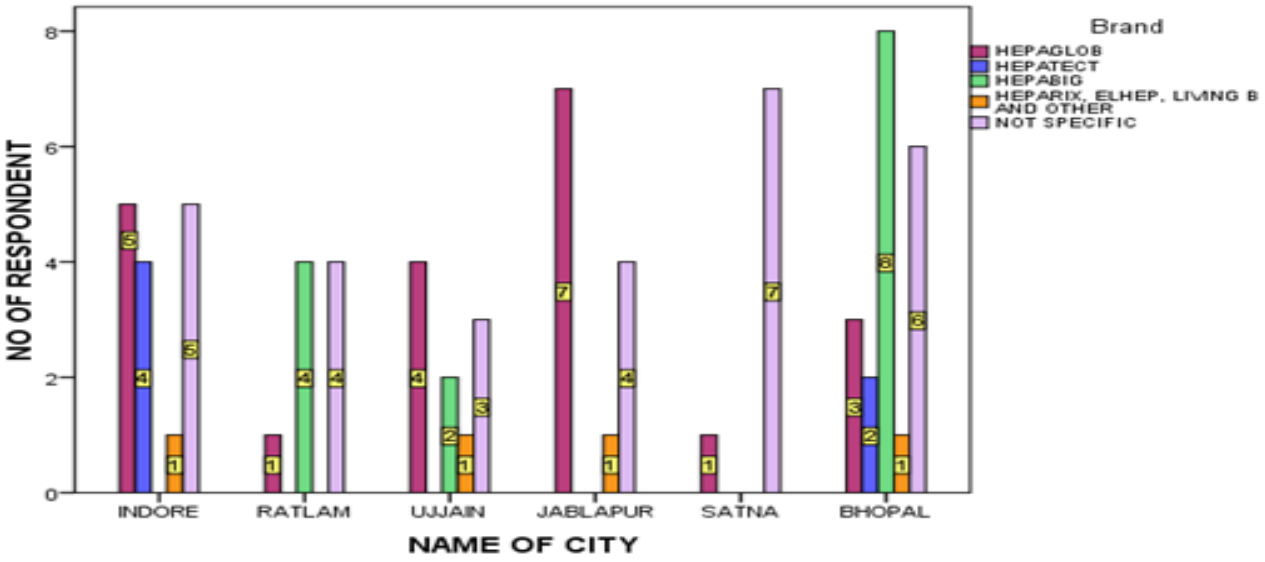


Fig.11 Source of analysis Q.4

Fig 11 shows brand used by doctor (city wise), cross study from overall data set show that in figure 8, we can easily say that city wise choice of brands are different.

5. Factors affect the doctors chose their hepatitis b ig brand.

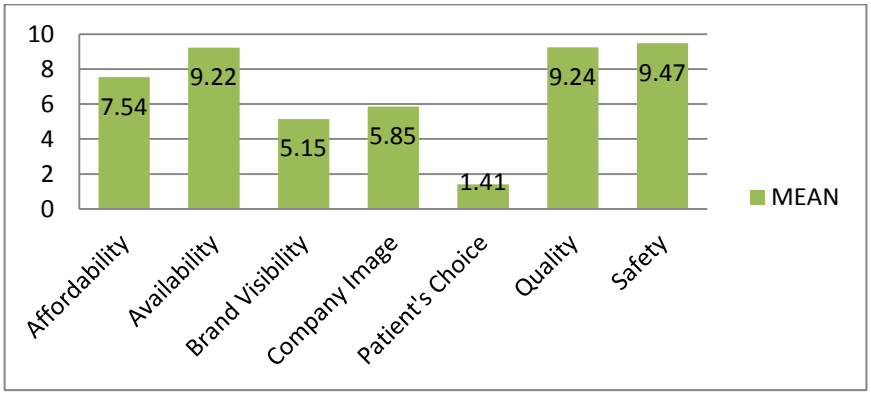


Fig.12 Source of analysis Q.5

Fig. 12 shows doctors used anti-hepatitis b ig brands mostly on the basis of safety, quality and availability.

6. Other indication for which anti-hepatitis b ig used by doctor.

- Neonate (as prophylaxis), when mother is hepatitis b positive.
- DNA titre down level

7. Satisfaction level of doctors from currently using hepatitis-b ig brands.

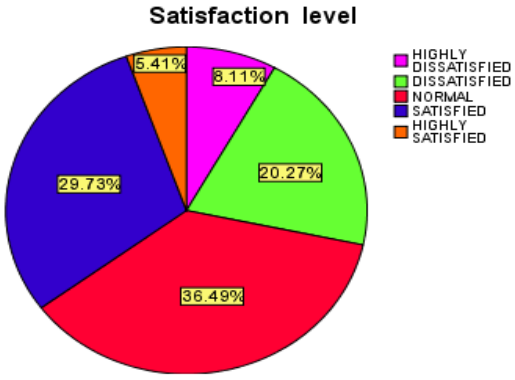


Fig.13 Source of questionnaire analysis Q.7

Fig. 13 shows overall satisfaction percentage, most of the doctors are not satisfied from the current usage of brands. Highly dissatisfied, dissatisfied and normal cover around 65% so there is good chance for plasmagen to penetrate in hepatitis b ig market.

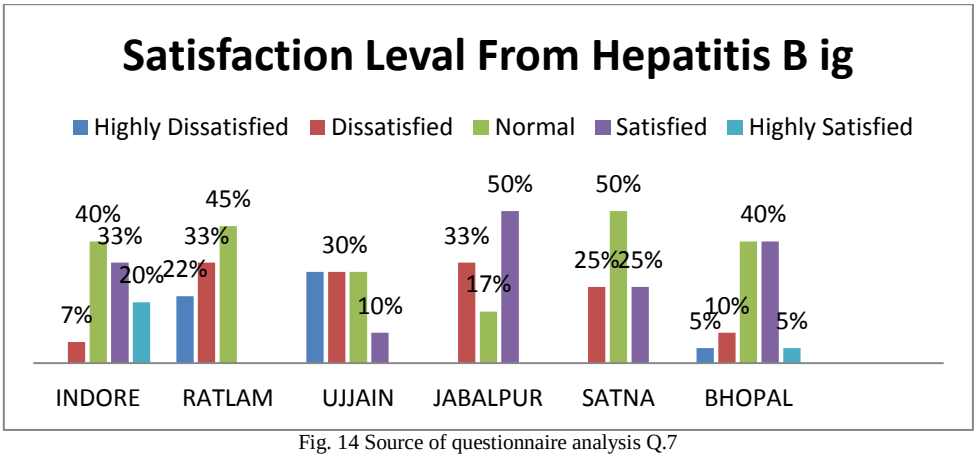


Fig. 14 Source of questionnaire analysis Q.7

Fig 14 shows city wise percentage satisfaction from currently used hepatitis b ig, by the help of cross study we can estimate city wise satisfaction level of brands (from fig.11 and fig.14 or data set of these questions)

8. Awareness level for anti-hepatitis ig according to doctors.

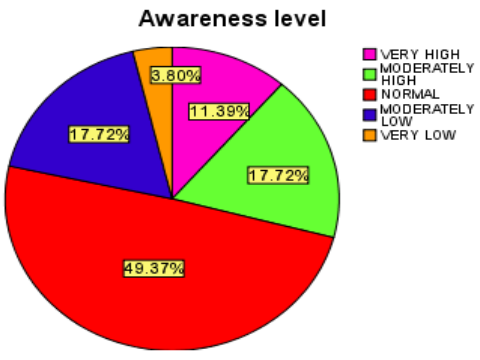


Fig. 15 Source of questionnaire analysis Q.8

Fig. 15 shows awareness level for hepatitis ig in medical fraternity is not good around 70% response come under very low, moderately low and normal category whereas 30% came under satisfied or highly satisfied category.

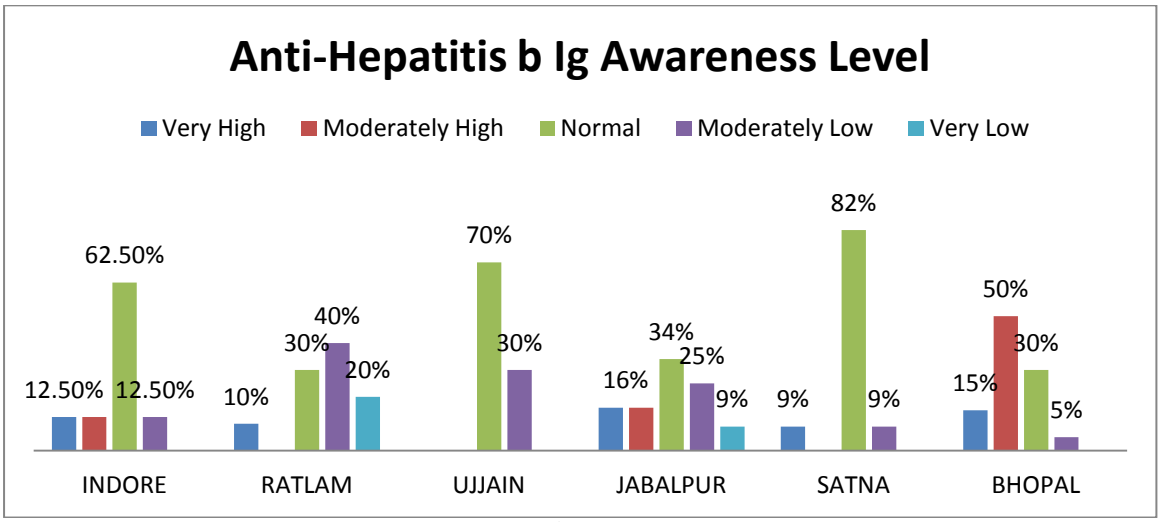


Fig. 16 Source of questionnaire analysis Q.8

Fig 16 shows city wise awareness level, according to that awareness level, Ratlam is worse and is followed by Jabalpur, satna, Ujjain, Indore and Bhopal.

9. Factors that would promote the usage of Anti-hepatitis b ig.

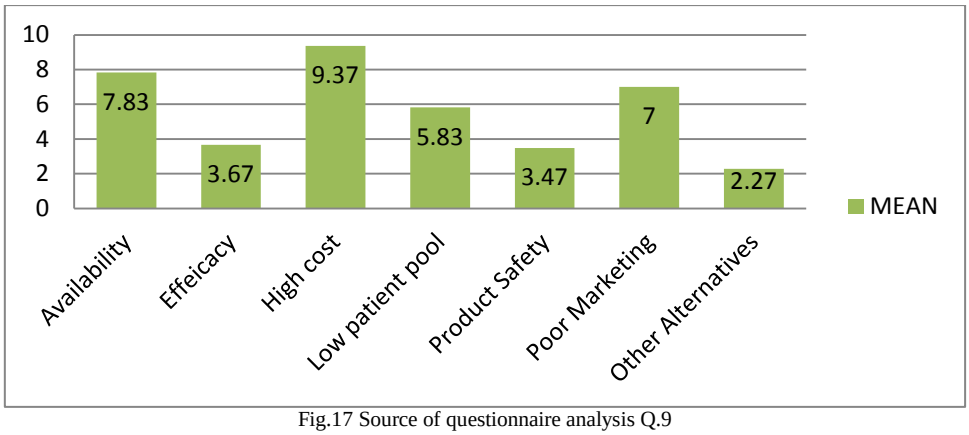


Fig.17 Source of questionnaire analysis Q.9

Fig. 17 in spite of awareness about hyperimmune globulin, doctors do not prescribe it mainly because of high cost, availability and poor marketing.

10. Need of awareness program and the kind of awareness program according to doctors.

Fig 18 shows city wise need of awareness program according to the doctors, in all city more than 80% of doctors filled the questionnaire, there is need of awareness program in city.
Most of doctors want to have an awareness program in form of CME with IMA or such type of organization.
Some doctor conveys good marketing practises and literature on hyperimmune globulin product is enough.

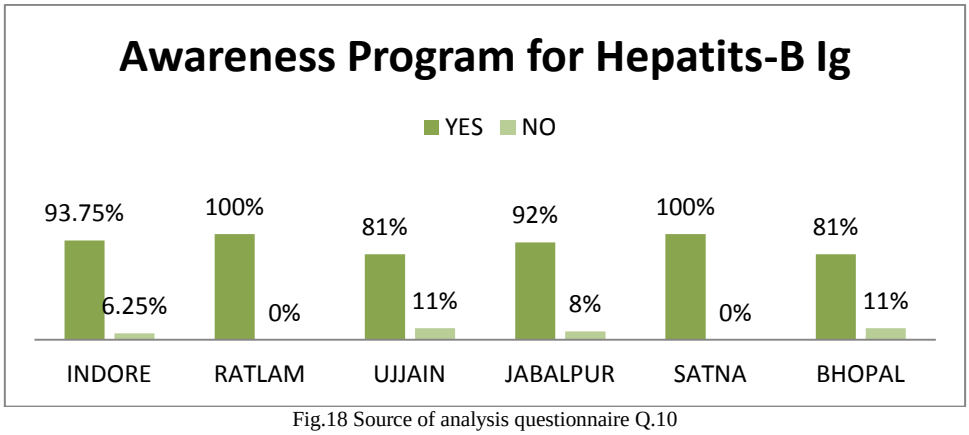


Fig.18 Source of analysis questionnaire Q.10

4.2 DATA ANALYSIS FOR ANTI-D IMMUNOGLOBULIN

For survey on anti-d immunoglobulin, 78 doctors were interviewed from different parts of territory.

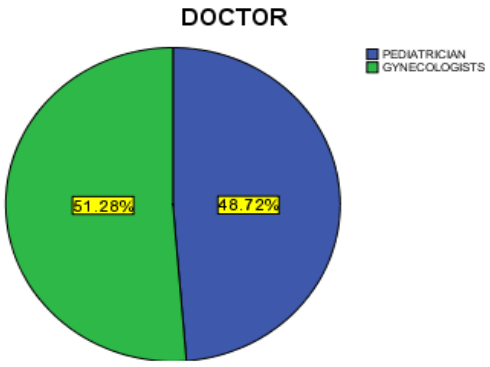


Fig.19 Source of questionnaire analysis

1. Frequency of usage for Anti-D Ig.

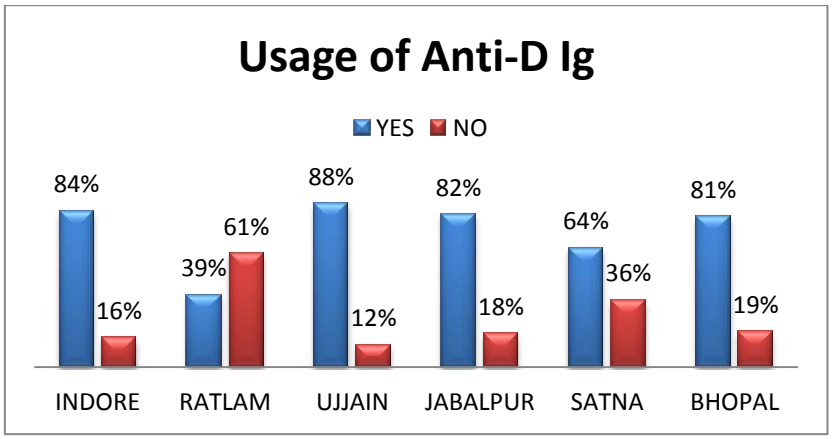


Fig 20 Source of questionnaire analysis anti-d Q.1

Fig. 20 shows usage of anti-d city wise, in Indore, Bhopal, Jabalpur city 80% of respondent doctors are user of anti-d ig, in Satna 64% and Ratlam only 39% doctors use anti-d ig.

Fig. 21 shows pattern of frequency used by doctor in term of percentage, this indicate prescribing pattern of anti-d ig city wise.

Anti-D ig is not used very frequently in all cities; most of city anti-d ig is not used frequently only in Bhopal doctors use anti-d ig frequently.

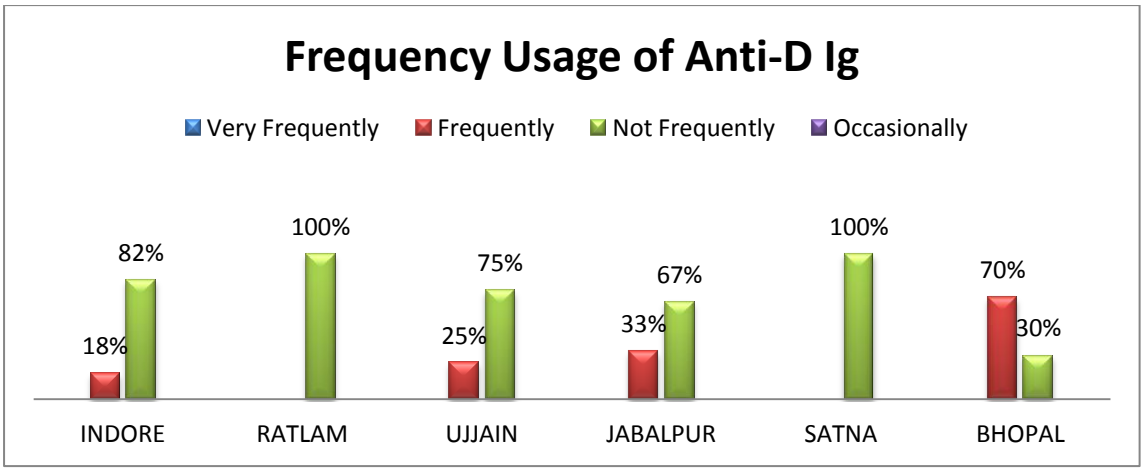


Fig 21 Source of questionnaire analysis anti-d Q.1

2. Anti-D Ig accessibility for doctors.

Fig. 22 shows how easy or difficult it is to get these products for doctors, in all cities availability of these products is quite easy.

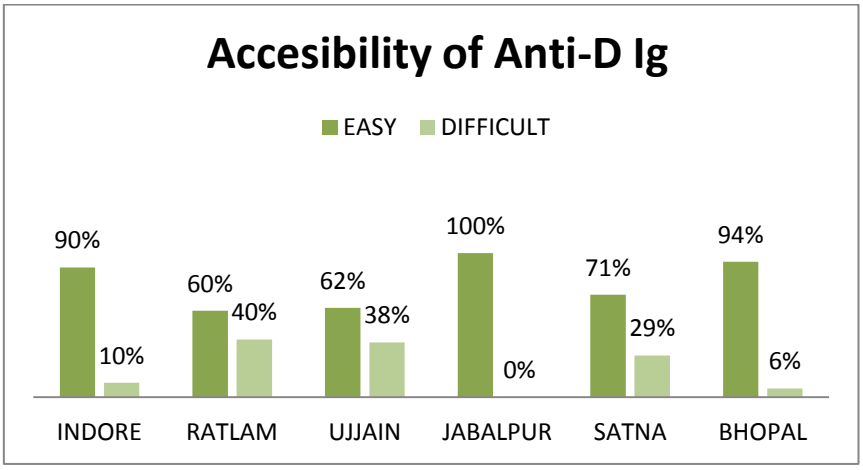


Fig 22 Source of questionnaire analysis anti-d Q.2

3. Rh Incompatibility diagnostic cases and percentage of patients who can be administered Anti-D ig.

Fig. 23 & 24 shows number of cases and percentage of patients who can be administered hyperimmune globulin.

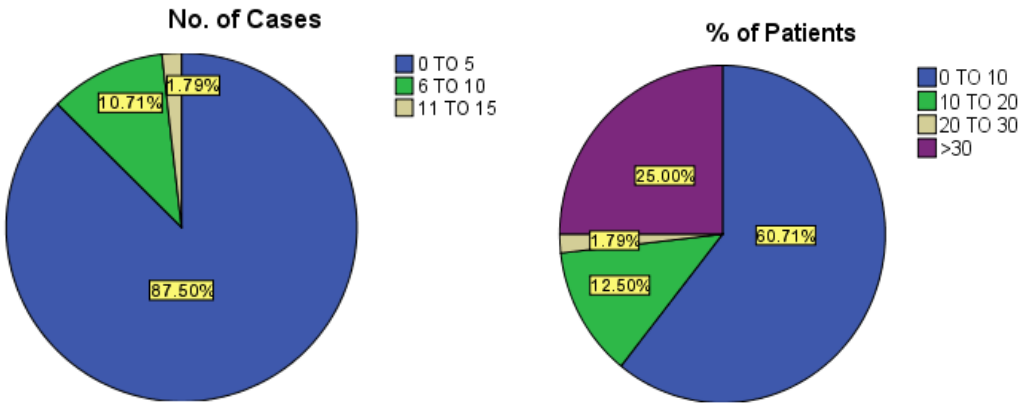


Fig 23 & 24 Source of questionnaire anti-d ig Q.3

4. Duration of treatment (Disease Management by Doctors)

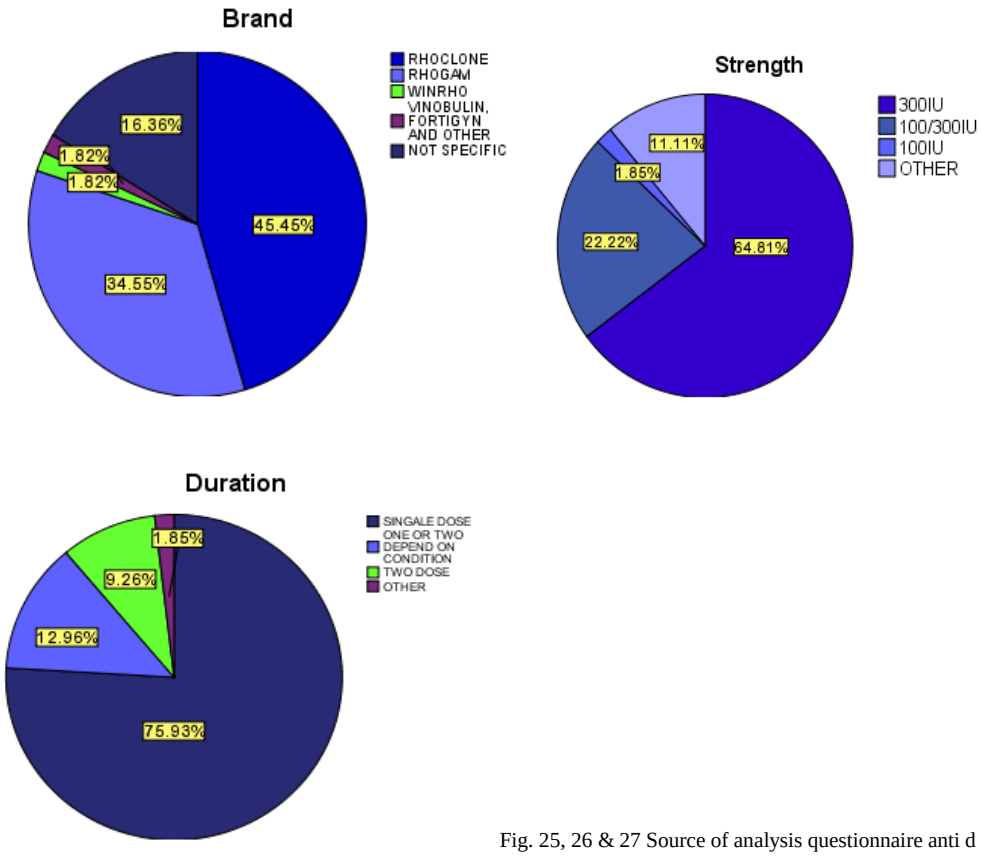


Fig. 25, 26 & 27 Source of analysis questionnaire anti d Q.4

Fig. 25, 26 & 27 shows overall scenario of all city, brand preference, strength and dose used by doctors in term of percentage.

Out of all anti-d ig prescriber doctors, the maximum prescriber are for Rhoclone having a share of 45% and followed by Rhogam which is 34% in the market.

Out of all prescriber, 16% are not specific for any brand and can be a very potential market and great opportunity for plasmagen.

Strength 300IU is used by 64% and around 75% doctors use only single dose.

Total 66% of all doctors use only one or two vial per month.

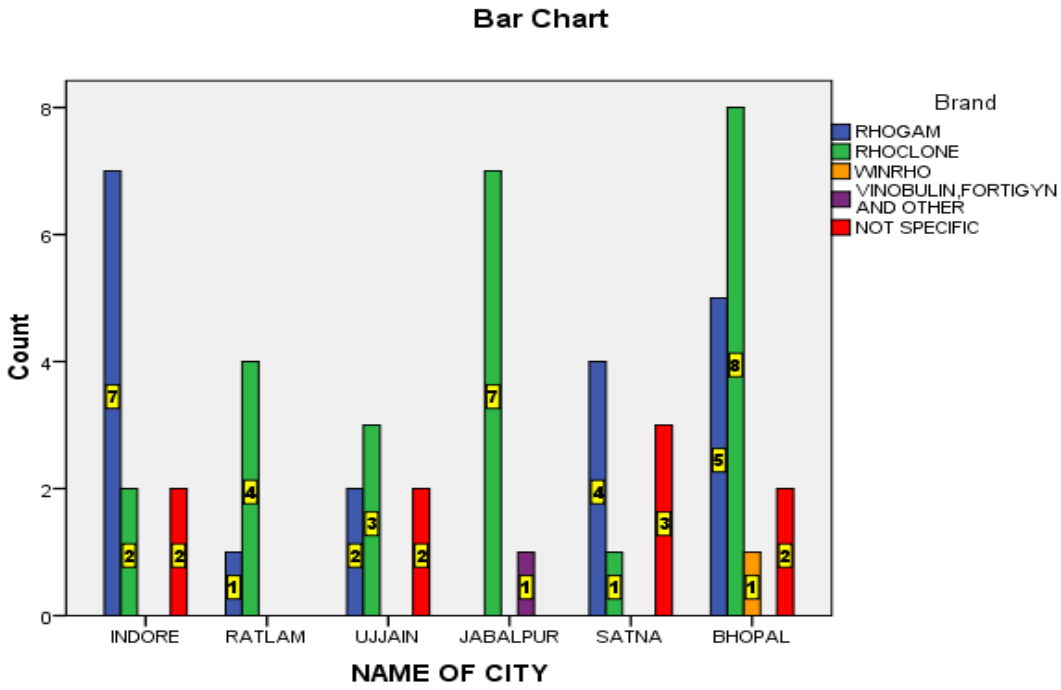


Fig.28 Source of questionnaire analysis Q.4

Fig 28 shows brand used by doctor (city wise), cross study from overall data set is shown in figure 25, we can easily say city wise choice of brands are different.

5. Factors affect the doctors chose their anti-d ig brand.

Fig. 29 shows that doctors use these brands mostly on the basis of safety, quality and availability.

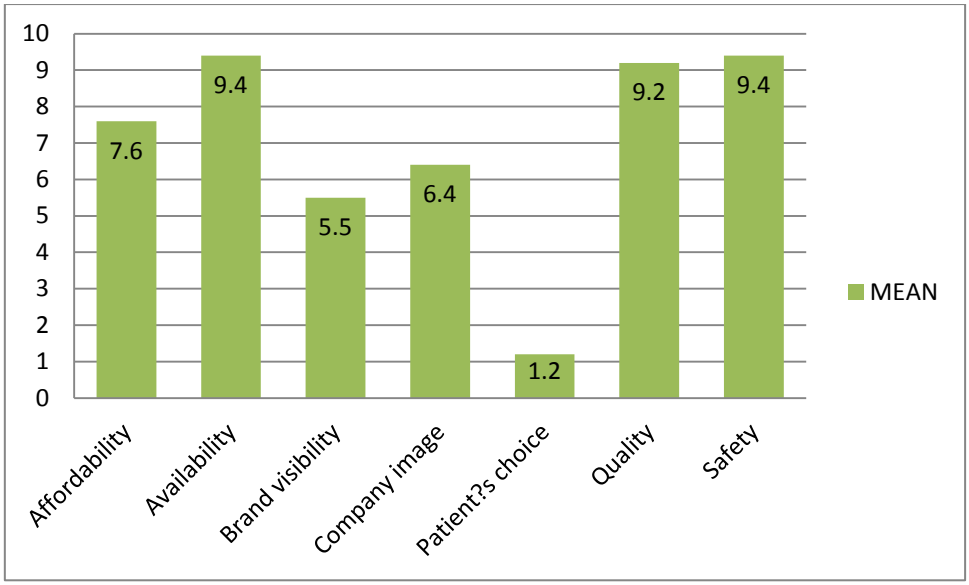


Fig.29 Source of questionnaire analysis anti-d Q.5

6. Other indication for which anti-hepatitis b ig used by doctor.

- Thrombocytopenia
- Most of the doctors do not response to this question and say that they use only it in rh incompatibility cases for both mother and baby.

7. Satisfaction level of doctors from currently using Anti-D ig brands.

Fig.30 Source of questionnaire analysis anti-d Q.7

Fig. 30 shows overall satisfaction in percentage form, most of doctors seem to be satisfied with usage of currently available brand. Highly satisfied, satisfied covers around 57% from overall satisfaction level. Normal, dissatisfied and highly dissatisfied cover 43% so there is good chances for plasmagen to penetrate anti-d ig market because large numbers of doctors are still not satisfied from usage brand.

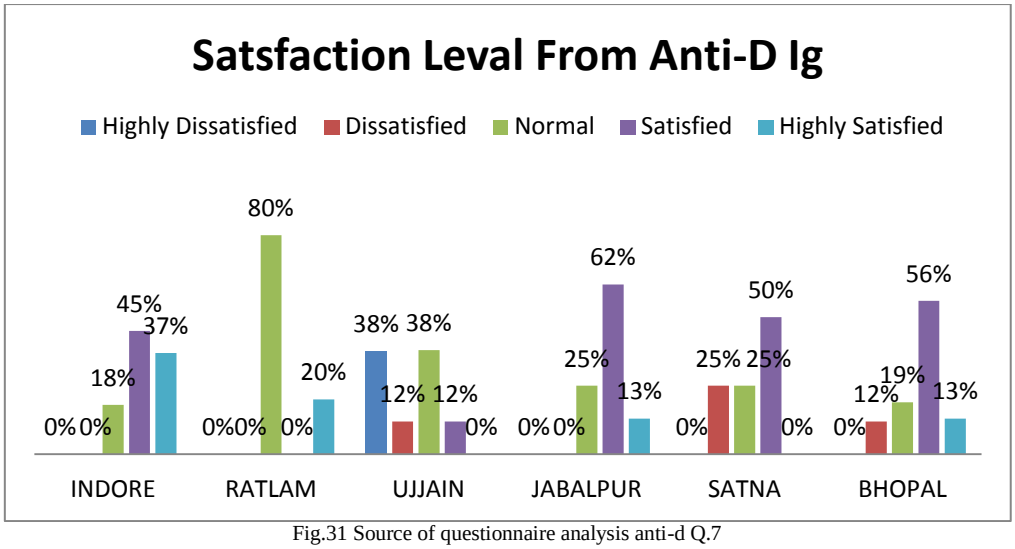


Fig.31 Source of questionnaire analysis anti-d Q.7

Fig. 31 shows city wise percentage satisfaction from currently used brand, by the help of cross study we can estimate city wise satisfaction level of brands (from fig.31 and fig.28 or data set of these questions)

8. Awareness level for anti-d ig according to doctors.

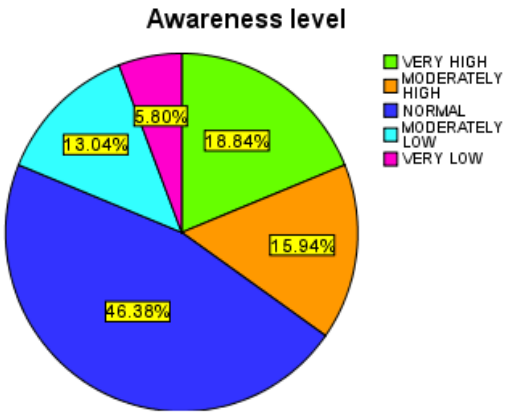


Fig.32 Source of questionnaire analysis anti-d Q.8

Fig. 32 shows awareness level for anti-d ig in medical fraternity is not good, around 65% response come under very low, moderately low and normal category; only 35% come under satisfied or highly satisfied category

Fig. 33 shows awareness level of Ratlam, Satna and Ujjain is not good and these cities need an awareness program for anti-d ig. In Bhopal, Indore and Jabalpur awareness is quite good for anti-d ig.

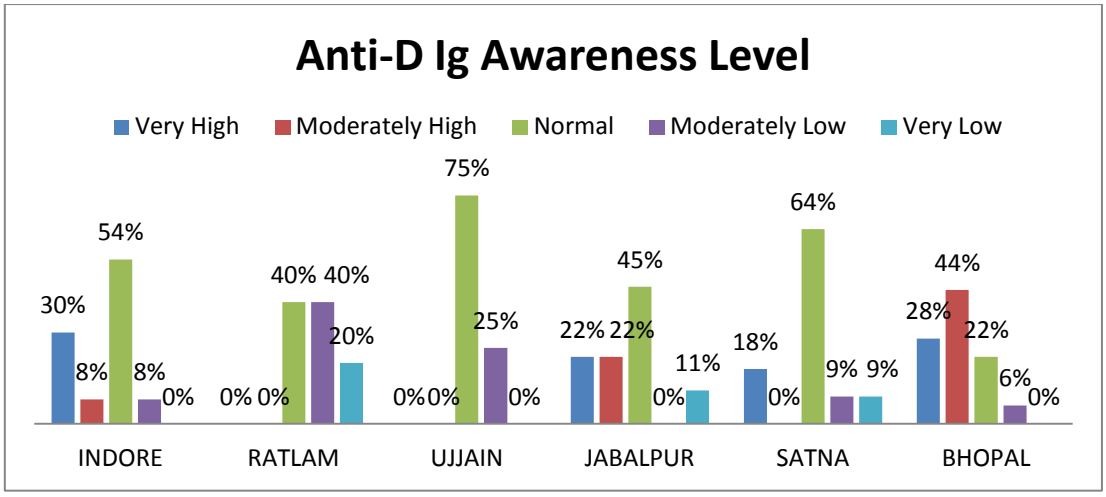


Fig.33 Source of questionnaire analysis anti-d Q.8

9. Factors that would promote the usage of Anti-D ig.

Fig. 34 in spite of awareness about hyperimmune globulin, doctors do not prescribe it mainly because of high cost, availability and poor marketing.

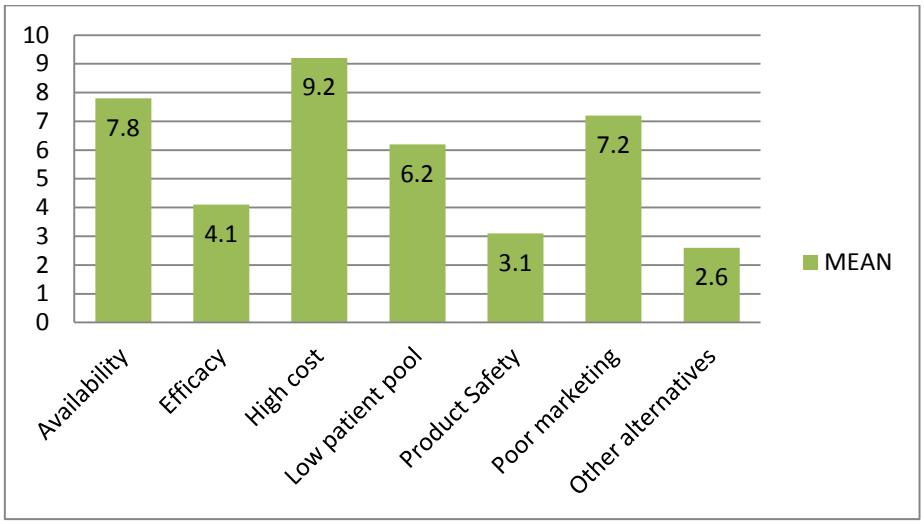


Fig. 34 Source of questionnaire analysis anti-d Q.9

10. Need of awareness program and the kind of awareness program according to doctors.

Fig 35 shows city wise need of awareness program according to the doctors, in all cities more than 80% of doctors who filled the questionnaire; there is need of awareness program in city. Most of doctors want to have an awareness program in form of CME with IMA or such type of organization.

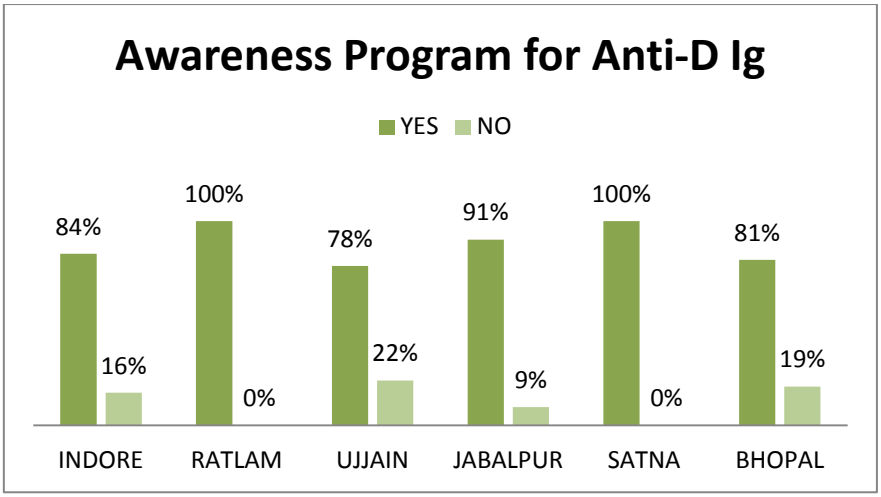
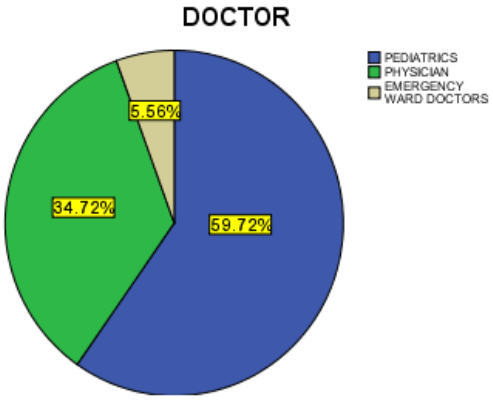


Fig.35 Source of questionnaire analysis anti-d Q.10

4.3 DATA ANALYSIS FOR ANTI-RABIES IMMUNOGLOBULIN

For survey on anti-rabies immunoglobulin, 72 doctors were interviewed from different parts of territory.



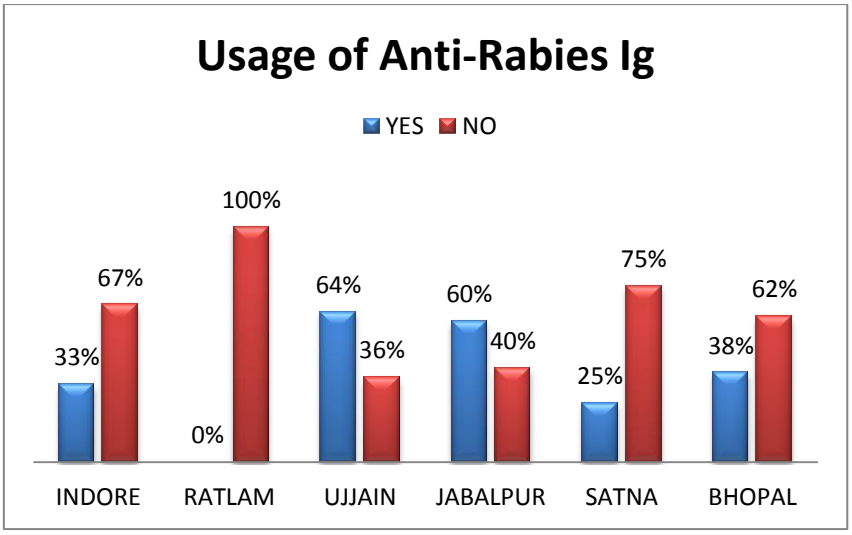
Fg.36 Source of questionnaire analysis anti-rabies ig

1. Frequency of usage for Anti-rabies Ig.

Fig. 37 shows usage of anti-rabies ig city wise, in Indore, Bhopal and Satna city more than 60% and in Ratlam it is 100% (according to surveyed doctor) of respondent doctors are not using of anti-rabies ig, in Ujjain 64% and Jabalpur only 60% doctors use anti-rabies ig.

Fig. 38 shows pattern of frequency used by doctor in term of percentage, this indicate prescribing pattern of anti-rabies ig city wise.

Anti-rabies ig is not used frequently in most of the cities; anti-rabies ig is used frequently only by Bhopal and Jabalpur doctors.



Fg.37 Source of questionnaire analysis anti-rabies ig Q.1

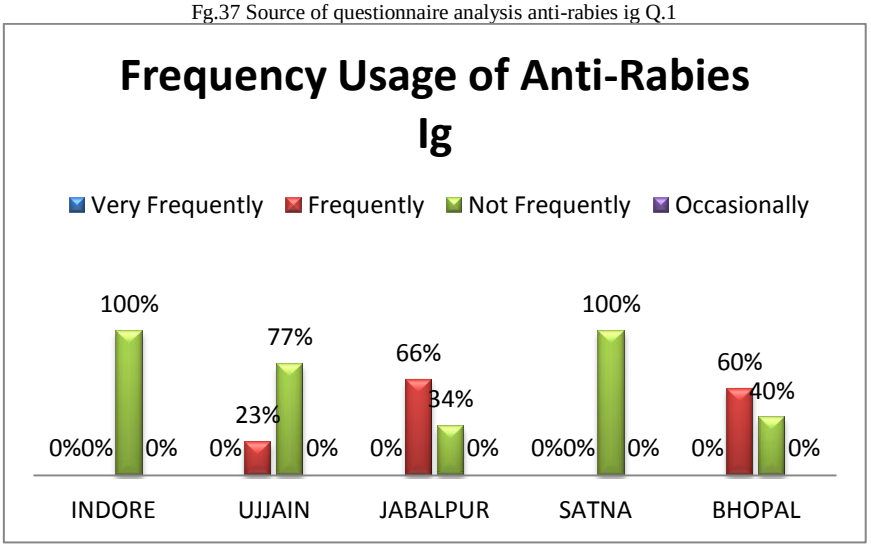


Fig. 38 Source of questionnaire analysis anti-rabies Q.1

2. Anti-rabies Ig accessibility for doctors.

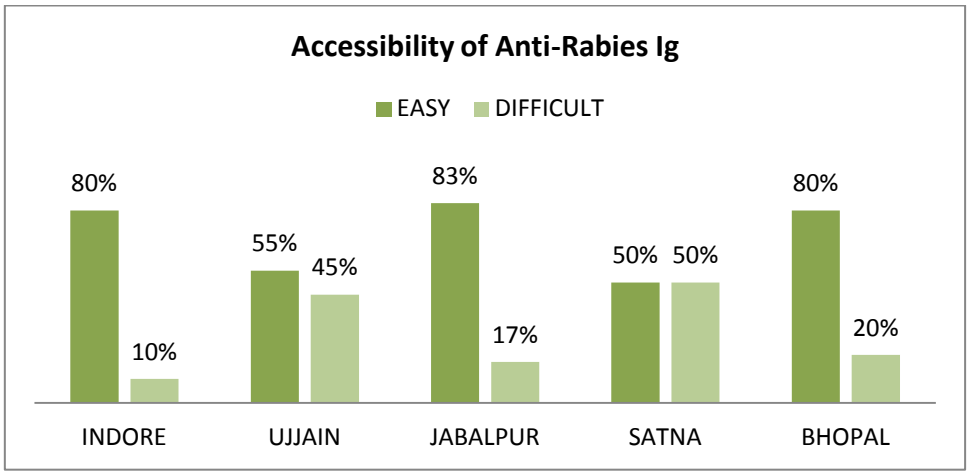


Fig. 39 Source of questionnaire analysis anti-rabies Q.2

Fig. 39 shows how easy or difficult it is to get anti-rabies for doctor, in Indore, Bhopal, Jabalpur cities availability of these products is quite easy. Some time in Ujjain availability of anti-rabies for doctors is difficult.

Satna city doctors get anti-rabies ig after 24hour, after they prescribe anti rabies ig for patients because it is made available from Jabalpur.

In Ratlam all doctors surveyed do not use anti-rabies ig and it is made available from Indore when need for patient is observed.

3. Rabies diagnostic cases and percentage of patients who can be administered Anti-Rabies Ig.

Fig. 40 & 41 shows number of cases and percentage of patients who can be administered hyperimmune globulin, in overall percentage form.

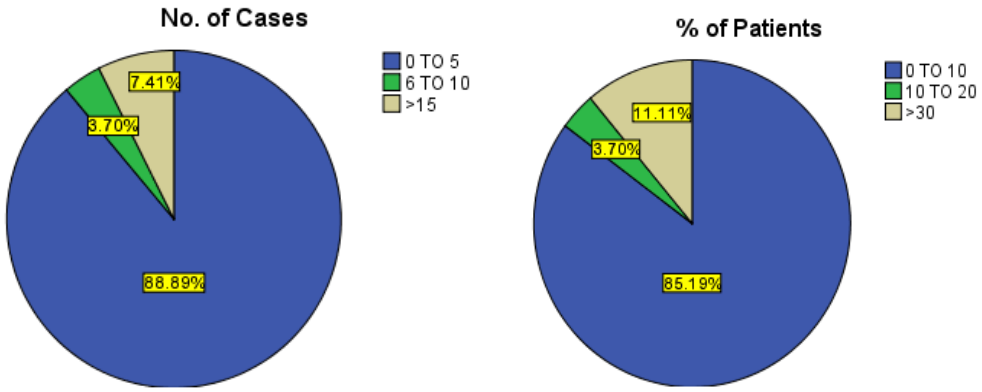


Fig. 40 & 41 Source of questionnaire analysis anti-rabies Q.3

4. Duration of treatment (Disease Management by Doctors)

Fig. 42, 43 & 44 shows overall scenario of all cities, brand preference, strength and dose used by doctor in terms of percentage.

Out of all anti-rabies prescriber doctors, 56% prescriber are not specific for any particular brand; they use any available brand. Equirab is the maximum selling brand followed by Imogam and Berirab.

Out of all prescriber, 56% are not specific for any brand which can be a potential market and great opportunity for plasmagen, but low usage and awareness level might be a problem.

Strength 500IU is used by most of doctors and around 88% doctor use only single dose.

Around 45% of doctors do not get chance to use anti-rabies ig per month and 33% of doctors use only one vial per month.

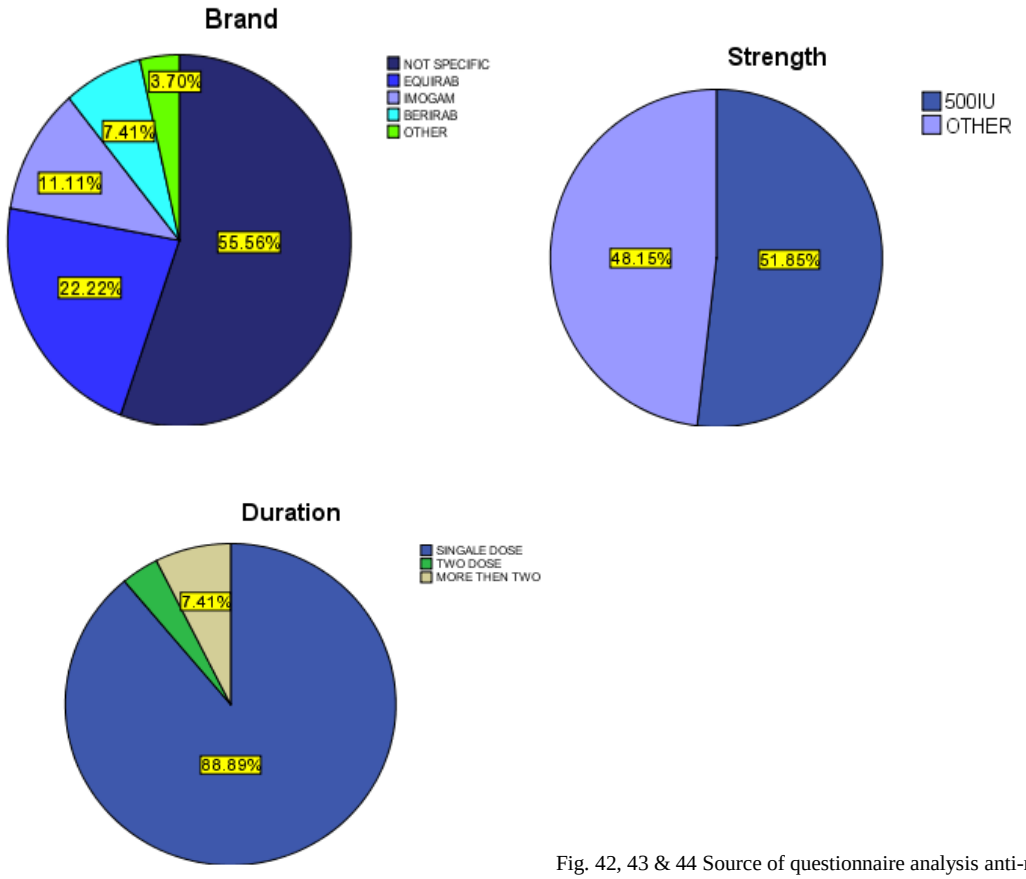


Fig. 42, 43 & 44 Source of questionnaire analysis anti-rabies Q.4

Fig 45 shows brand used by doctor in city wise, cross study from overall data set which is shown in figure 42, we can easily say that city wise choice of brands is different.

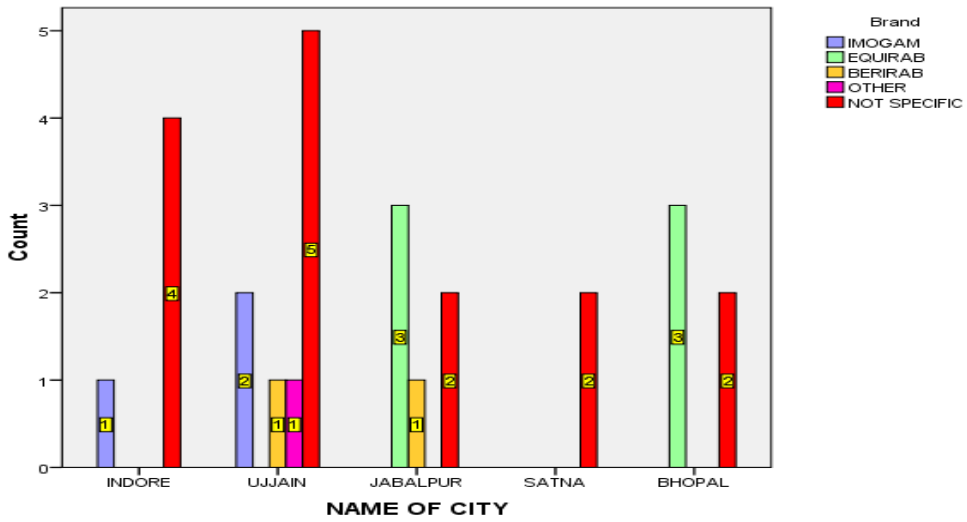


Fig. 45 Source of questionnaire analysis anti-rabies Q.4

5. Factors affect the doctors chose their anti-rabies ig brand.

Fig. 46 shows doctors used these brands mostly on the basis of safety, quality, availability and affordability.

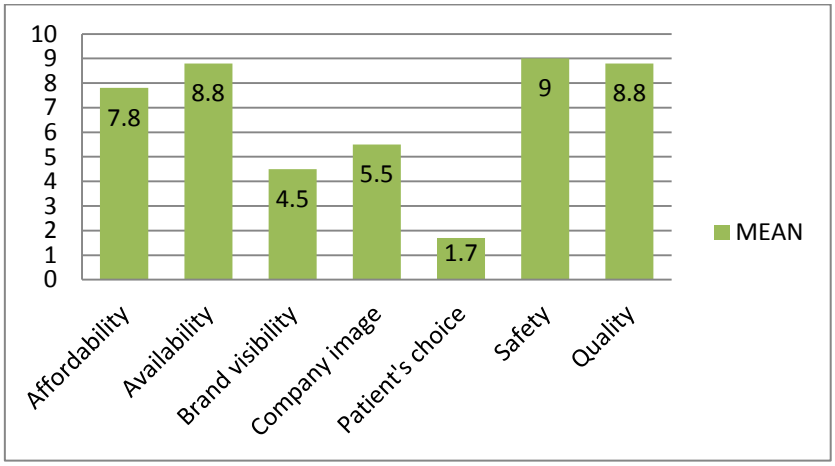


Fig. 46 Source of questionnaire analysis anti-rabies Q.5

6. Other indication for which anti-rabies ig is used by doctor.

- Bad bite on face
- Maximum number of doctors do not use any anti-rabies ig for any indication.

7. Satisfaction level of doctors from currently using Anti-rabies ig brands.

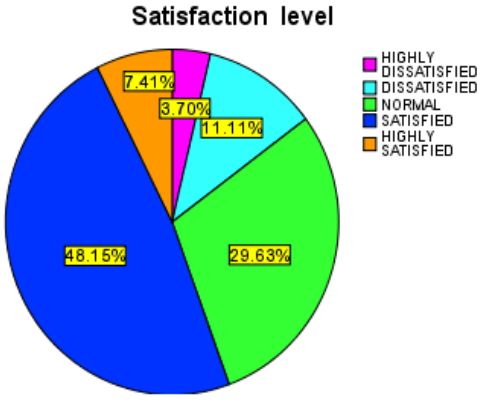


Fig. 47 Source of questionnaire analysis anti-rabies Q.7

Fig. 47 shows overall satisfaction in percentage form, most of the doctors seem to be satisfied with usage of currently available brand. Highly satisfied, satisfied covers around 55% from overall satisfaction level, normal, dissatisfied and highly dissatisfied cover 45% so there is good chances for plasmagen to penetrate anti-rabies ig market because large number of doctors are still not satisfied from usage brand.

Fig. 48 shows city wise percentage satisfaction from currently usage anti-rabies ig brand, by the help of cross study we can estimate city wise satisfaction level of brands (from fig.48 and fig.45 or data sate of these questions)

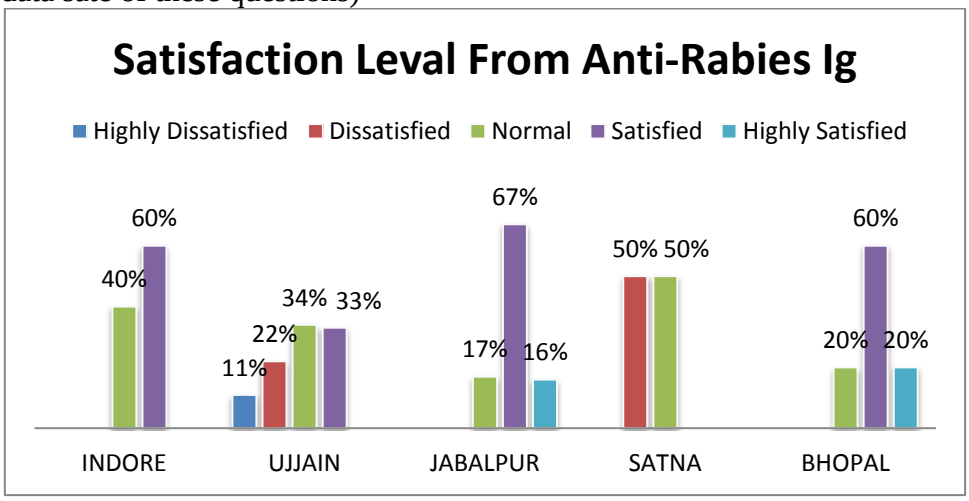


Fig. 48 Source of questionnaire analysis anti-rabies Q.7

8. Awareness level for anti-rabies ig according to doctors.

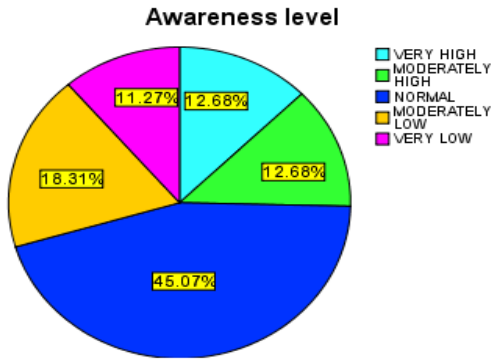


Fig. 49 Source of questionnaire analysis anti-rabies Q.8

Fig. 49 shows awareness level for anti-rabies ig in medical fraternity is not good and around 74% response came under very low, moderately low and normal category, only 26% came under satisfied or highly satisfied category

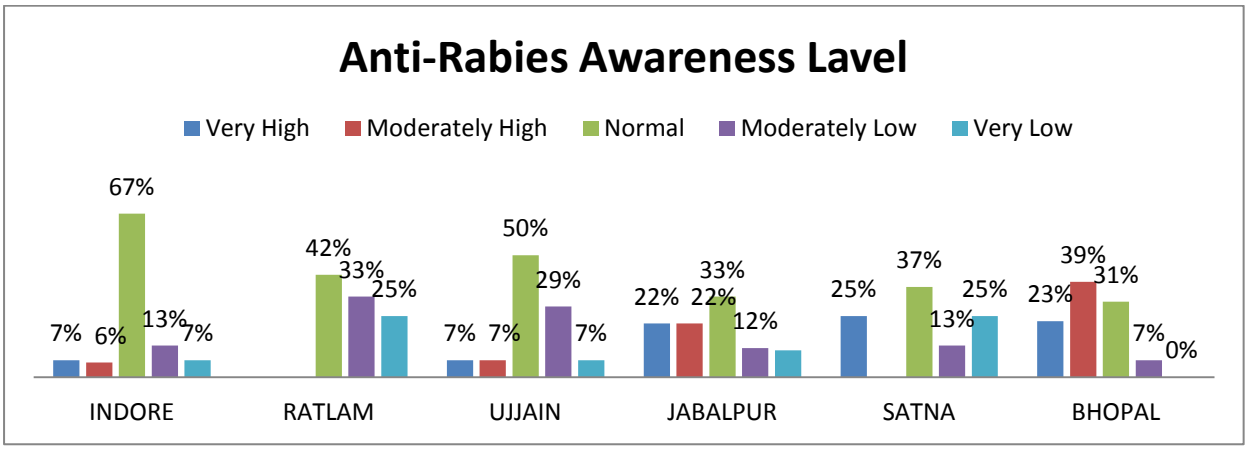


Fig. 50 Source of questionnaire analysis anti-rabies Q.8

Fig. 50 shows awareness level of anti-rabies ig, awareness level is not good in all cities for anti rabies ig.

9. Factors that would promote the usage of Anti-Rabies ig.

Fig. 51 in spite of awareness about anti-rabies ig, doctors does not prescribe it, mainly because of high cost, availability and poor marketing.

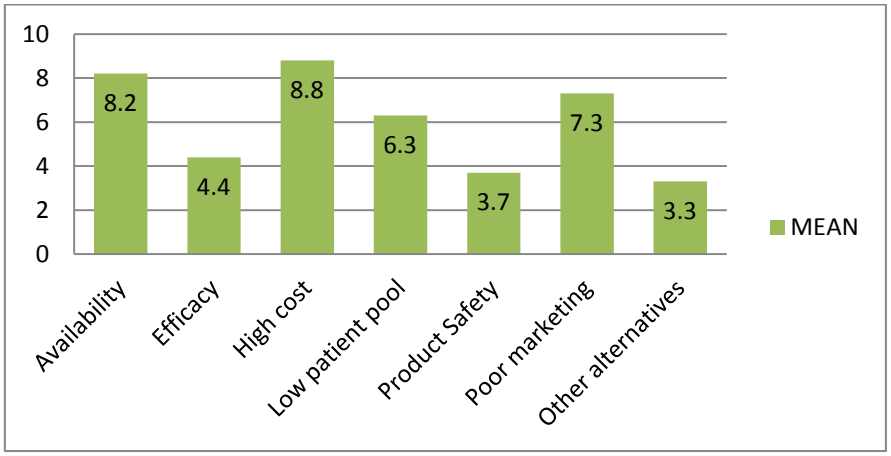


Fig. 51 Source of questionnaire analysis anti-rabies Q.9

10. Need of awareness program and the kind of awareness program according to doctors.

Fig 52 shows city wise need of awareness program, according to the doctors in all cities more than 85% of doctors filled the questionnaire and there is a need of awareness program in the city.
Most of the doctors want to have an awareness program in form of CME with IMA or such type of organization.

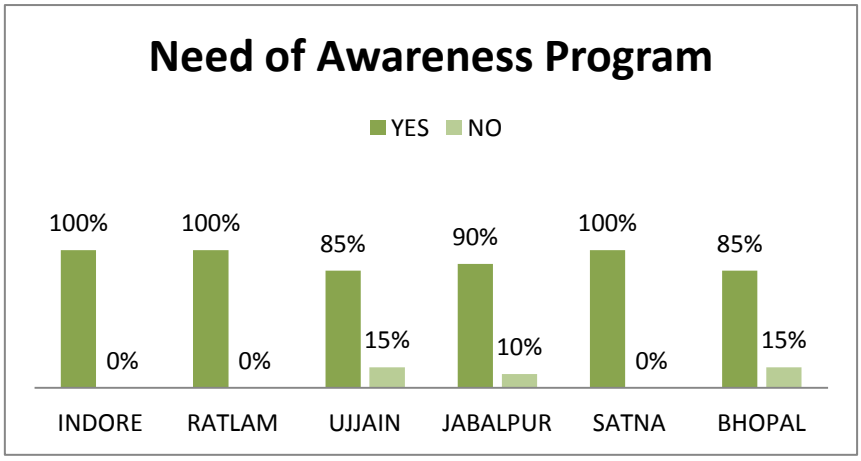


Fig. 52 Source of questionnaire analysis anti-rabies Q.10

4.4 DATA ANALYSIS FOR ANTI-TETANUS IMMUNOGLOBULIN

For survey on anti-tetanus ig immunoglobulin, 72 doctors were interviewed from different parts of the territory.

1. Frequency of usage for Anti-tetanus Ig.

Fig. 53 shows usage of anti-tetanus ig (city wise), in Bhopal, Indore, Jabalpur and Ujjain city more than 50% of respondent doctors are using anti-tetanus ig, in ratlam only 17% and in satna only 37% doctors use anti-tetanus ig.

Fig. 54 shows pattern of frequency used by doctors in term of percentage, this indicate prescribing pattern of anti-tetanus city wise.

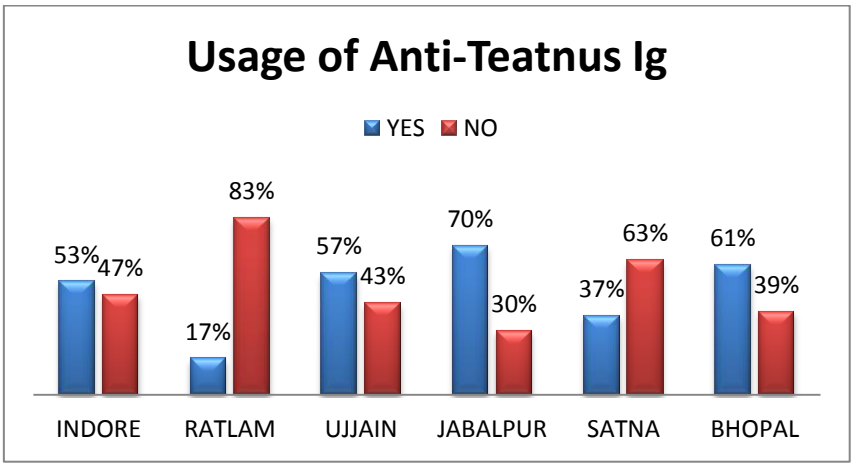


Fig. 53 Source of questionnaire analysis anti-tetanus ig Q.1

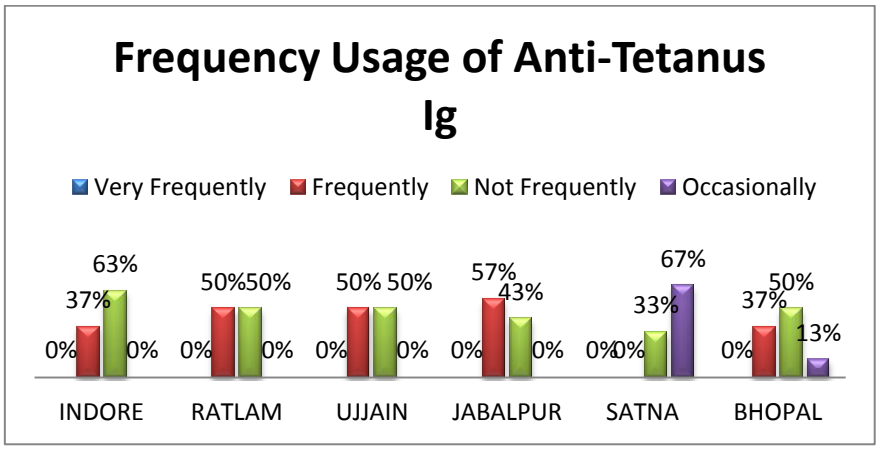


Fig. 54 Source of questionnaire analysis anti-tetanus ig Q.1

2. Anti-tetanus Ig accessibility for doctors.

Fig. 55 shows how easy or difficult it is to get these products for doctors, in all cities anti-tetanus ig is easily accessed by doctors.

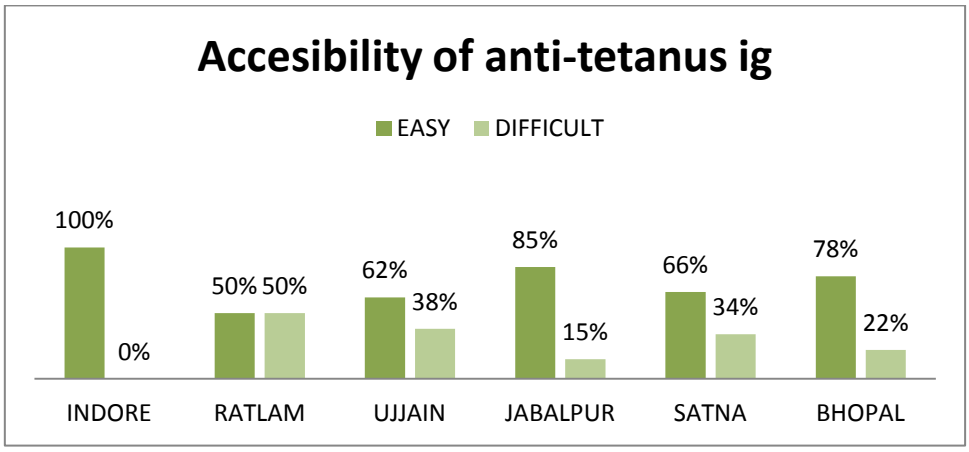


Fig. 55 Source of questionnaire analysis anti-tetanus ig Q.2

3. Tetanus diagnostic cases and percentage of patients who can be administered Anti-Tetanus Ig.

Fig. 56 & 57 shows number of cases and percentage of patients who can be administered hyperimmune globulins, in overall percentage form.

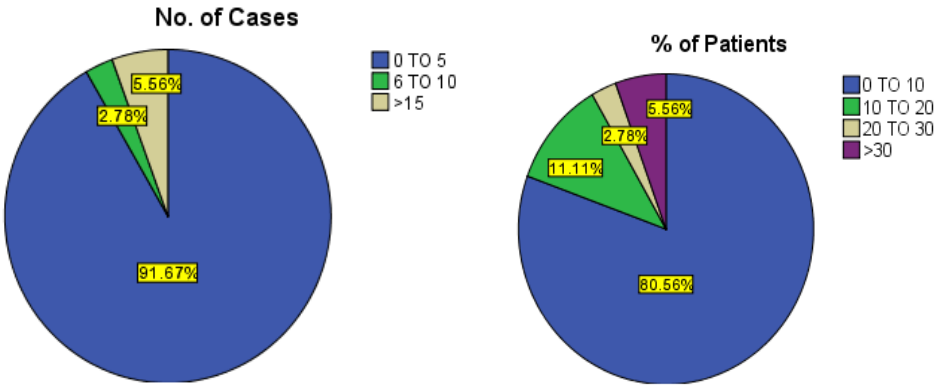


Fig. 56 & 57 Source of questionnaire analysis anti-tetanus ig Q.3

4. Duration of treatment (Disease Management by Doctors)

Fig. 58 & 59 shows overall scenario of all cities, brand preference, strength and dose used by doctor in term of percentage.

Out of all anti-tetanus ig prescriber doctors, 49% prescriber are prescribed Tetglob and followed by TIG (Serum institute) with 20% market share.

Out of all prescriber, 29% are not specific for any brand and can be a very potential market and great opportunity for plasmagen.

Strength 250 and 500IU is used by 98% of doctors who use only single dose of anti tetanus ig.

Around 20% of doctors do not get a chance to use anti-tetanus ig per month and 40% of doctors use only one vial per month, rest 40% get a chance to prescribe more than two vial per month.

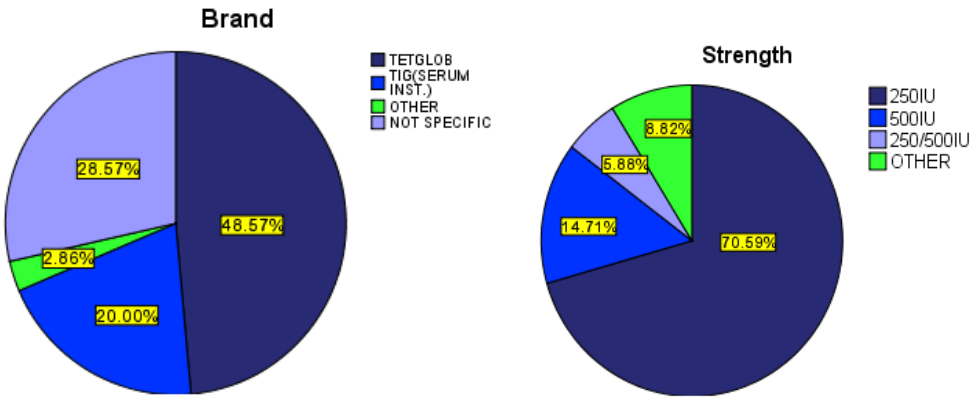


Fig. 58 & 59 Source of questionnaire analysis anti-tetanus ig Q.4

Fig 60 shows brand used by doctor in (city wise), cross study from overall data sate which show in a figure 58, we can easily say city wise choice of brands are different.

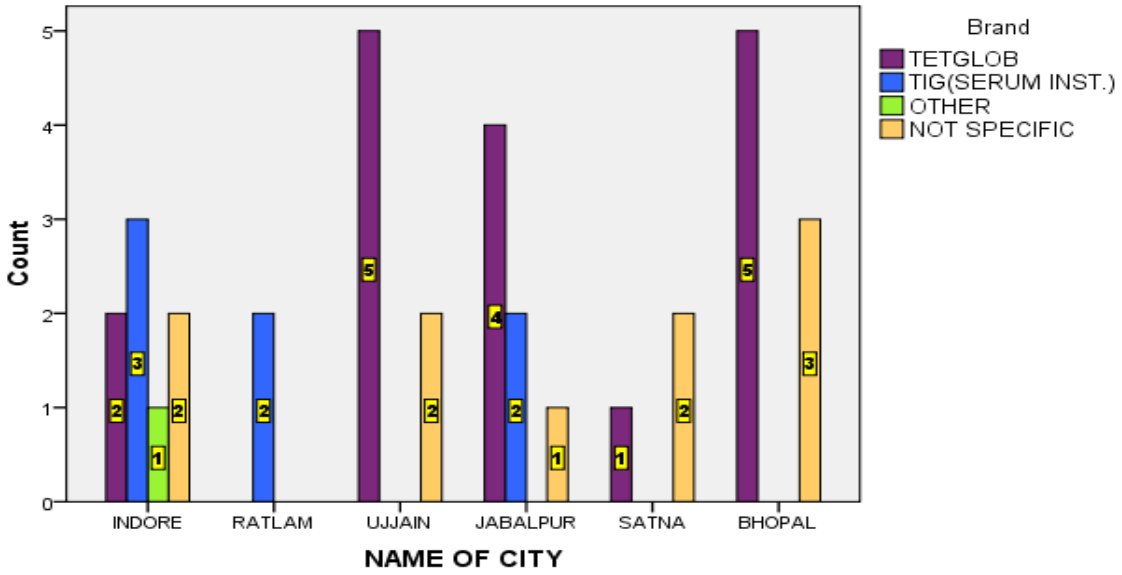


Fig. 60 Source of questionnaire analysis anti-tetanus ig Q.4

5. Factors affect the doctors chose their anti-tetanus ig brand.

Fig. 61 shows doctors used these brands mostly on the basis of safety, quality, availability and affordability.

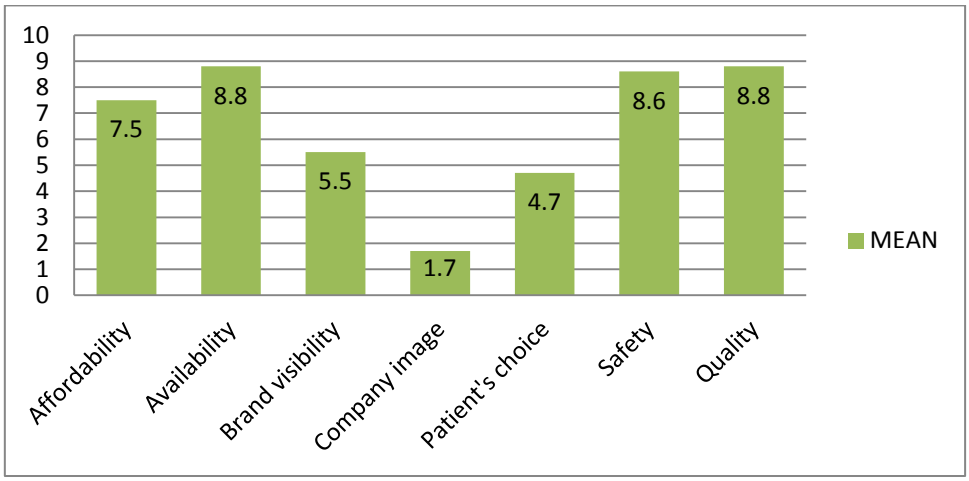


Fig. 61 Source of questionnaire analysis anti-tetanus ig Q.5

6. Other indication for which anti-tetanus ig is used by doctors.

Patient's personal history of immunization with tetanus toxoid is unknown and patient come with major injury.

7. Satisfaction level of doctors from currently using Anti-Tetanus ig brands.

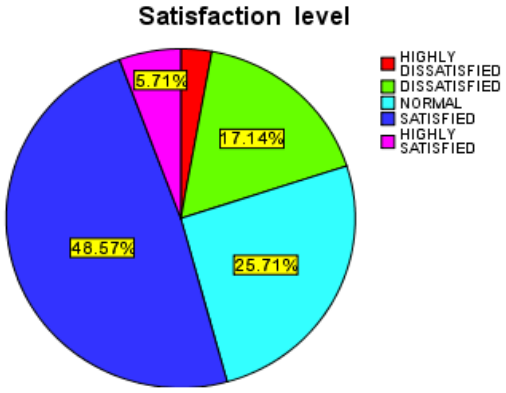


Fig. 62 Source of questionnaire analysis anti-tetanus ig Q.7

Fig. 62 shows overall satisfaction in percentage form, most of doctors seem to be satisfied with usage of currently available brand. Highly satisfied, satisfied covers around 55% from overall satisfaction level, normal, dissatisfied and highly dissatisfied cover 45% so there is good chances for plasmagen to penetrate anti-tetanus ig market because large number of doctors are still not satisfied from usage brand.

Fig. 63 shows city wise percentage satisfaction from currently usage brand, by the help of cross study we can estimate city wise satisfaction level of brands (from fig.63 and fig.60 or data sate of these questions)

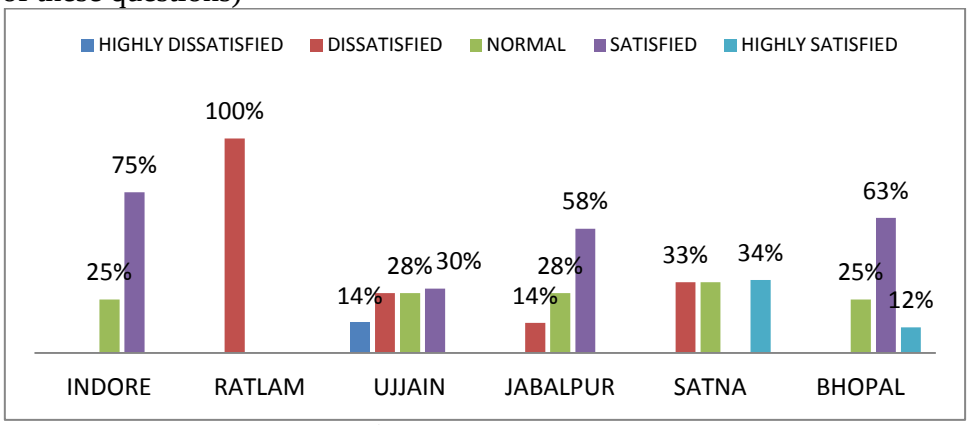


Fig. 63 Source of questionnaire analysis anti-tetanus ig Q.7

8. Awareness level for anti-tetanus ig according to doctors.

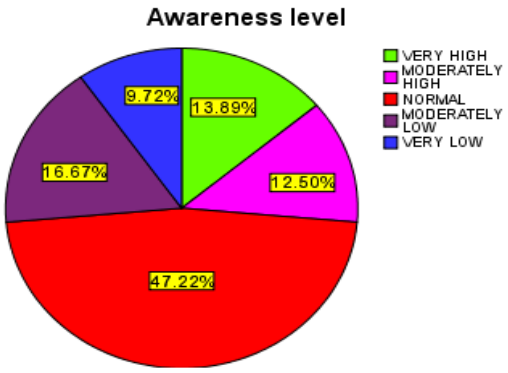


Fig. 64 Source of questionnaire analysis anti-tetanus ig Q.8

Fig. 49 shows awareness level for anti-tetanus ig in medical fraternity is good around 72% response come under very high, moderately high and normal category, only 28% come under dissatisfied or highly dissatisfied category.

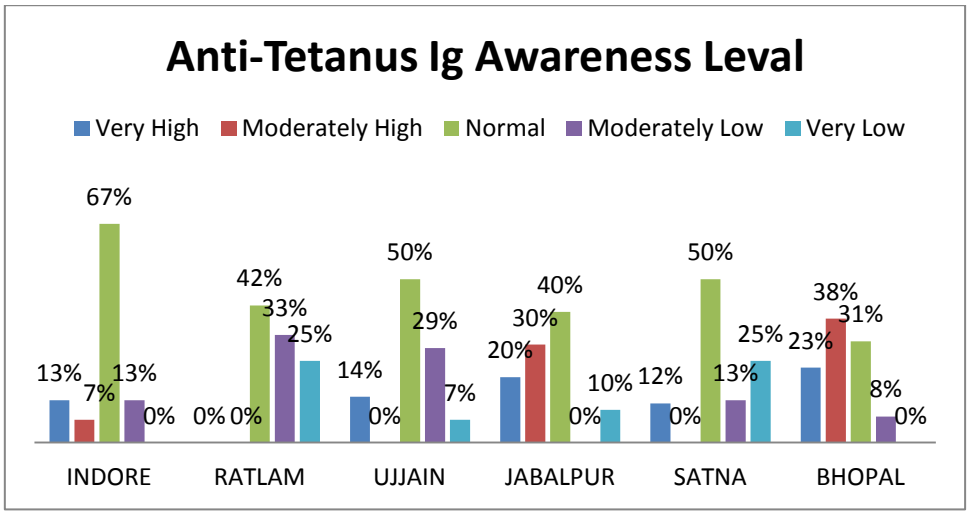


Fig. 65 Source of questionnaire analysis anti-tetanus ig Q.8

Fig. 65 shows city wise awareness level for anti tetanus ig, awareness level for anti-tetanus ig is not good in Ratlam, Ujjain and Satna.

9. Factors that would promote the usage of Anti-Tetanus ig.

Fig. 66 in spite of awareness about hyperimmune globulin, doctors do not prescribe it, mainly because of high cost, availability and poor marketing.

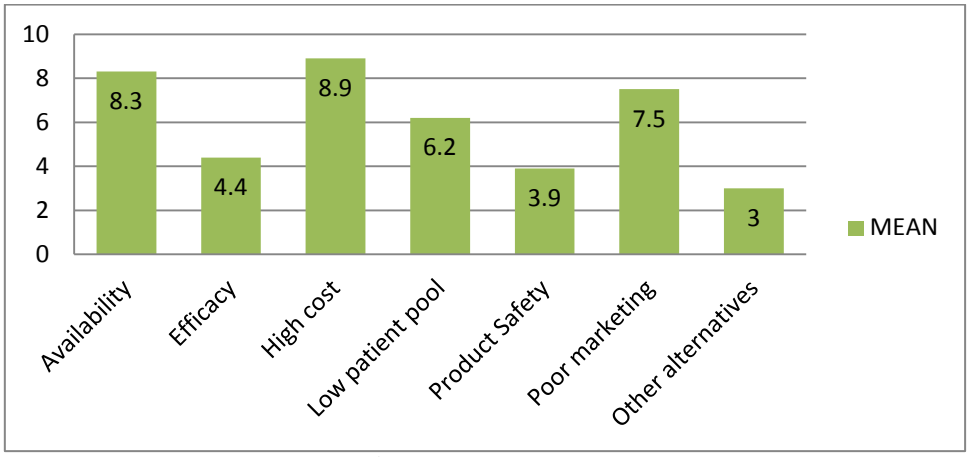


Fig. 66 Source of questionnaire analysis anti-tetanus ig Q.9

10. Need of awareness program and the kind of awareness program according to doctor.

Fig. 67 shows city wise need of awareness program, according to the doctors, in all cities more than 85% of doctors who filled the questionnaire, there is a need of awareness program in the city.
Most of doctors want to have an awareness program in form of CME with IMA or such type of organization.

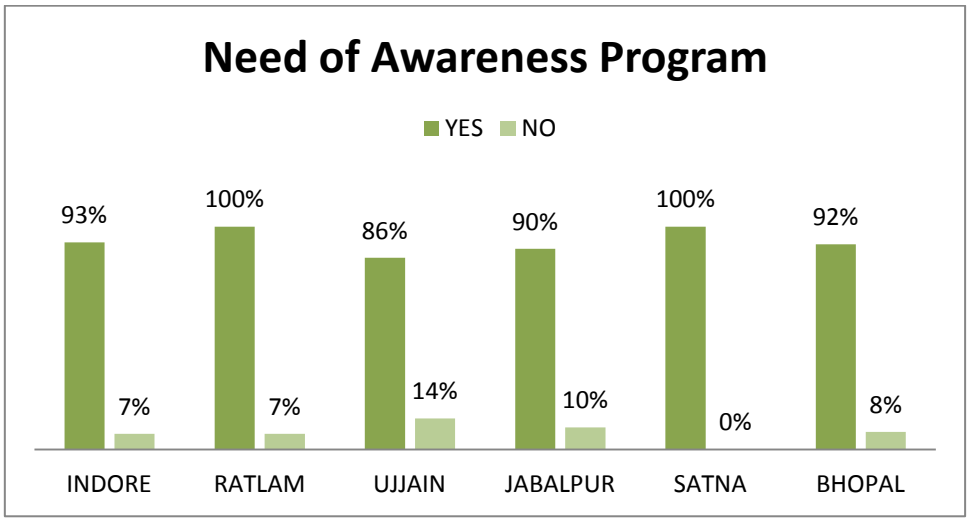


Fig. 67 Source of questionnaire analysis anti-tetanus ig Q.10

4.5 FINDINGS AND CONCLUSION

4.5.1 HEPATITIS-B IG

- Out of all respondents for hepatitis-b ig 84% doctors are using hepatitis-b ig only 16% of doctors were aware but not using hepatitis-b ig, so good number of doctors are using hepatitis b ig.
- Out of all hepatitis-b ig prescriber 73% were not using frequently only 27% using hepatitis-b ig frequently.
- 70% of doctors considered hepatitis-b ig easily available for the treatment and 30% of doctors having problem of availability of hepatitis-b ig. Although hepatitis-b ig is easily available for the treatment.
- 94% doctors saw 0 to 5 cases per month and 88% doctors prescribed hepatitis-b ig only 0-10% hepatitis-b cases. So we can say consumption of hepatitis-b ig is very low.
- 28% doctor prescribed Hepaglob, so Hepaglob is most prescribed brand by doctor followed by Hepabig 19%, Hepatect 9% and other brand like Heparix, Elhep and Living-b 5%.
- Around 40% of doctors who were not specific for any brand may be a source potential market and great opportunity for plasmagen.
- Most of doctors chose there prescribe hepatitis-b ig brand due to availability, since availability weighted mean is as high as 9.22.
- Maximum number of the doctors is not satisfied from the current usage of brands. Highly dissatisfied, dissatisfied and normal cover around 65% so there is good chance for plasmagen to penetrate in hepatitis b ig market.
- Awareness level for hepatitis b ig in medical fraternity is not good around 70% response come under very low, moderately low and normal category whereas 30% came under satisfied or highly satisfied category. So awareness program is needed in these territory and also 90% of doctors respond they need to have awareness program in form of CME's.
- 16% doctors aware for hepatitis-b but not used hepatitis-b ig because of the high cost and availability, as supported by the data itself whose weighted mean were found to be 9.37 and 7.83 mean value of availability.
- City wise scenario of usage pattern, accessibility, brand usage, satisfaction level and awareness level is far different from central data analysis of hepatitis-b.
- Accessibility is not good for hepatitis-b ig in Ratlam and Satna as compare with other cities (show in fig. 5).
- In my territory Hepaglob is most prescribing brand overall but in Bhopal and Ratlam most prescribing brand was found to be Hepabig. so we estimate brand and city wise satisfaction by the help of data (show in fig 11&14)
- In Ratlam and Ujjain awareness level for hepatitis b ig is low according to doctors, we can estimate city wise awareness level by fig 16. This can help in making strategy for city wise brand promotion and awareness program design.
- In all cites doctor needed awareness program for hepatitis b ig.

4.5.2 ANTI-D IG

- Out of all respondents for anti-d ig 27% doctors were aware but not using anti-d ig and 73% of doctors used anti-d ig.
- Out of all anti-d ig prescribers 79% were not using anti-d ig frequently only 21% using frequently.
- 84% of doctors considered anti-d ig easily available for the treatment and 16% of doctors having problem of availability of anti-tetanus ig. Although anti-d ig is easily available for the treatment.
- 87% doctors saw 0 to 5 cases per month and 61% doctors prescribed anti-d ig only 0-10% Rh Incompatibility cases. So we can say consumption of anti-d ig is very low.
- 45% doctor prescribed Rhoclone, so Rhoclone is most prescribed brand by doctor followed by Rhogam 35% and other brand like Winrho, Vinobulin, Fortigyn 5%.
- Around 15% of doctors who were not specific for any brand may be a source potential market and great opportunity for plasmagen.
- Most of doctors chose there prescribe anti-d ig brand due to availability, since availability weighted mean is as high as 9.4.
- Maximum number of the doctors is not satisfied from the current usage of brands. Highly dissatisfied, dissatisfied and normal cover around 43% so there is good chance for plasmagen to penetrate in anti-d ig market.
- Awareness level for anti-d ig in medical fraternity is not good around 65% response come under very low, moderately low and normal category whereas 35% came under satisfied or highly satisfied category. So awareness program is needed in these territory and also 90% of doctors respond they need to have awareness program in form of CME's.
- 27% doctors aware for anti-d ig but not used anti-d ig because of the availability, as supported by the data itself whose weighted mean were found to be 9.2 mean value of availability.
- City wise scenario of usage pattern, accessibility, brand usage, satisfaction level and awareness level is far different from central data analysis of anti-d.
- Accessibility is good for anti-d ig in all cities (show in fig.22).
- In my territory Rhoclone is most prescribing brand overall but in Indore and Satna most prescribing brand was found to be Rhogam. so we estimate brand and city wise satisfaction by the help of data (show in fig 28&31)
- In Ratlam awareness level for anti-d ig is low according to doctors; we can estimate city wise awareness level by fig 33. This can help in making strategy for city wise brand promotion and awareness program design.

4.5.3 ANTI-RABIES IG

- Out of all respondents for anti-rabies ig 62.5% doctors were aware but not using hepatitis-b ig, only 37.5% of doctors used anti-rabies ig. These indicate, most of doctors do not prescribe anti rabies ig.
- Out of all anti-rabies ig prescribers 66% were not using anti-rabies ig frequently only 34% using frequently.
- 70% of doctors considered anti-rabies ig easily available for the treatment and 30% of doctors having problem of availability of anti-rabies ig. Although anti-rabies ig is easily available for the treatment.
- 89% doctors saw 0 to 5 cases per month and 85% doctors prescribed anti-rabies ig only 0-10% rabies cases. So we can say consumption of anti-rabies ig is very low.
- 23% doctor prescribed Equirab, so Equirab is most prescribed brand by doctor followed by Imogam 11%, Berirab 7% and other brand 3%.
- Around 56% of doctors who were not specific for any brand may be a source potential market and great opportunity for plasmagen.
- Most of doctors chose there prescribe anti-rabies ig brand due to availability, since availability weighted mean is as high as 8.8.
- Maximum number of the doctors is not satisfied from the current usage of brands. Highly dissatisfied, dissatisfied and normal cover around 45% so there is good chance for plasmagen to penetrate in anti-rabies ig market.
- Awareness level for anti-rabies ig in medical fraternity is not good around 75% response come under very low, moderately low and normal category whereas 25% came under satisfied or highly satisfied category. So awareness program is needed in these territory and also 93% of doctors respond they need to have awareness program in form of CME's.
- 62.5% doctors aware for anti-rabies ig but not used anti-rabies ig because of the high cost, availability, poor marketing and low patient pool as supported by the data itself whose weighted mean were found to be 8.9, 8.3,7.5 and 6.2 mean value.
- City wise scenario of usage pattern, accessibility, brand usage, satisfaction level and awareness level is far different from central data analysis of anti-rabies ig.
- Accessibility is not good for anti-rabies ig in Satna as compare with other cities (show in fig. 39) and in Ratlam there is no availability of anti-rabies ig confirmed by doctors.
- In my territory Equirab is most prescribing brand overall but in Indore and Ujjain most prescribing brand was found to be Imogam. so we estimate brand and city wise satisfaction by the help of data (show in fig 45 & 48)
- In Ratlam and Satna awareness level for anti-rabies ig is low according to doctors; we can estimate city wise awareness level by fig 50. This can help in making strategy for city wise brand promotion and awareness program design.
- In all cites doctor needed awareness program for anti-rabies ig.

4.5.4 ANTI-TETANUS IG

- Out of all respondents for anti-tetanus ig 50% doctors were aware but not using tetanus ig and 50% of doctors used anti-tetanus ig. These indicate, most of doctors do not prescribe anti tetanus ig.
- Out of all anti-tetanus ig prescribers 58% were not using anti-tetanus ig frequently only 42% using frequently.
- 78% of doctors considered anti-tetanus ig easily available for the treatment and 22% of doctors having problem of availability of anti-tetanus ig. Although anti-tetanus ig is easily available for the treatment.
- 92% doctors saw 0 to 5 cases per month and 81% doctors prescribed anti-tetanus ig only 0-10% tetanus cases. So we can say consumption of tetanus ig is very low.
- 49% doctor prescribed Tetglob, so Tetglob is most prescribed brand by doctor followed by Tetanus Immunoglobulin (Serum Inst.) 20% and other brand 2%.
- Around 29% of doctors who were not specific for any brand may be a source potential market and great opportunity for plasmagen.
- Most of doctors chose there prescribe anti-tetanus ig brand due to availability, since availability weighted mean is as high as 8.8.
- Maximum number of the doctors is not satisfied from the current usage of brands. Highly dissatisfied, dissatisfied and normal cover around 45% so there is good chance for plasmagen to penetrate in anti-tetanus ig market.
- Awareness level for anti-tetanus ig in medical fraternity is not good around 73% response come under very low, moderately low and normal category whereas 27% came under satisfied or highly satisfied category. So awareness program is needed in these territory and also 93% of doctors respond they need to have awareness program in form of CME's.
- 50% doctors aware for anti-tetanus ig but not used anti-tetanus ig because of the high cost, availability, poor marketing and low patient pool as supported by the data itself whose weighted mean were found to be 8.9, 8.3,7.5 and 6.2 mean value.
- City wise scenario of usage pattern, accessibility, brand usage, satisfaction level and awareness level is far different from central data analysis of anti-tetanus ig.
- Accessibility is not good for anti-tetanus ig in Ratlam as compare with other cities (show in fig. 55).
- In my territory Tetglob is most prescribing brand overall but in Indore and Ratlam most prescribing brand was found to be Tetanus Immunoglobulin (Serum Inst.). so we estimate brand and city wise satisfaction by the help of data (show in fig 60 & 65)
- In Ratlam awareness level for anti-tetanus ig is low according to doctors; we can estimate city wise awareness level by fig 65. This can help in making strategy for city wise brand promotion and awareness program design.
- In all cites doctor needed awareness program for anti-tetanus ig.

CHAPTER-5 RECOMMENDATIONS

1. As availability of plasma product is not good and majority of plasma product used mainly on the basis of availability, the plasmagen should try to make these product readily available in market.
2. Some city like Ratlam and Satna doctors made these products available by them self from nearby big cities and there is no sales activity by any of plasma Product Company in these cities, so easily penetration in the market is possible in these cities by making availability of plasma product and making frequent visit by sales team.
3. My maximum respondents of questionnaire also using albumin frequently so albumin is also good product for launch in market.
4. The company can follow competitive pricing with currently available brand as it has been found by analysis that these product are not used by doctor because high cost and availability.
5. Most of doctors are not specific for particular brand even doctors don't know brand name of plasma product in these category so plasmagen is also having an opportunity to cover the untapped market and the share of doctors by improving its market reach.
6. Plasma product consume in a very low quantity because of only low awareness, availability and high cost so plasmagen can do something extra on these parameters.
7. In government hospitals, these products made available from tender market so plasmagen has an opportunity to penetrate in tender market.
8. Anti-d ig much consumed in market in my territory as compare to anti-hepatitis b ig, anti-rabies ig and anti-tetanus ig so anti d ig product launch can give good results and good return of investment.
9. Anti-rabies ig and anti-tetanus ig is used in market in very low quantity because of good vaccination program free provided by the government hospitals so survival of these two products in market may be a challenge for any company.

CHAPTER-6 ANNEXURE

HYPER-IMMUNE PROTEINS: INDIAN SCENE

Dr. ……Specialty: ……..…….....

Address: ……

…….....

…..…… City …….

Ph. No.: …… Mobile: ……....

Email: ……

1. Are you using any plasma products (Albumin, Immunoglobulins, **Anti-D IG, Anti-Rabies IG, Hep-B IG, Anti-Tetanus IG**, Coagulation Factors, α-1 Antitrypsin etc.) in course of your treatment? If yes, how frequently and product details.

   ……...

   ……

   ……...

2. How easy/difficult it is to get these products?

   ……

   ……

3. Number of patients who require the following products. *(Tick the appropriate)*

Number of cases						**% of Patients who can be administered Hyperimmune globulins**			
	0-5	**6-10**	**11-15**	**> 15**		**0 -10**	**10-20**	**20-30**	**>30*(specify)***
Hepatitis B									
Rabies									
Tetanus									
Rh Incompatibility									

4. Duration of Treatment:

Disease	**Brand**	**Strength**	**Duration**	**Vials P/M**	**Any Supplementary Product**
Hepatitis B					
Rabies					
Tetanus					
Rh Incompatibility					

5. Choice of your brand is due to:

Parameter	***Score***
Affordability	
Availability	
Brand visibility	
Company image	
Patient's choice	
Quality	
Safety	

(Assign a score on a scale of 1-10, 10 being the most significant and 1 the least significant parameter)

6. Any other indication for which Hyperimmune globulins can be prescribed?

Product	Indication
Anti-Hepatitis Ig	
Anti-Rabies Ig	
Anti-Tetanus Ig	
Anti D Ig	

7. Your opinion on the usage of currently available brands?

Product	Highly Dissatisfied	Dissatisfied	Normal	Satisfied	Highly Satisfied
Anti-Hepatitis Ig					
Anti-Rabies Ig					
Anti-Tetanus Ig					
Anti D Ig					

8. Present awareness level about Hyperimmune globulins is in the medical fraternity of this:

Product	Very high	Moderately High	Normal	Moderately low	Very low
Anti-Hepatitis Ig					
Anti-Rabies Ig					
Anti-Tetanus Ig					
Anti D Ig					

9. In spite of awareness about Hyperimmune globulins, but still it is not a part of your therapy regimen due to:

Parameter	*Score*
Availability	
Efficacy	
High cost	
Low patient pool	
Product Safety	
Poor marketing	
Other alternatives	

(Assign a score on a scale of 1-10, 10 being the most significant and 1 the least significant parameter)

10. Do you think conducting awareness program would help the medical fraternity in this city? If so, what kind of awareness program you would recommend?
……
……

11. Any references, if you would like to give -

……