

**TO COMPARE BETWEEN BRANDS & THEIR MARKET SHARE OF
ACYCLOVIR IN YAVATMAL REGION*****¹Tejas P. Talan, ²Gayatri Waghmare, ³Dr. Karishma A. Nikose, ⁴Dr. Rahul S. Bijwar**^{1,2}Student of J. I. P. R, Kalamb.³Associate Professor in J. I. P. R, Kalamb⁴Principle of J. I. P. R, Kalamb.

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ABSTRACT

This study focuses on the comparison between different brands and their market share of acyclovir. Acyclovir, a widely used antiviral drug, is available in multiple brands with varying strengths, prices, and market performance. The objective of this work is to evaluate the availability, pricing, and sales trends of different acyclovir brands across selected medical stores. Data were collected from various medical stores including Ganga Medical, Vidharbha Medical, Maharashtra Medical, Shri Krupa Medical, Subhedar Medical, Adishakti Medical, Bora Medical, Praful Medical, Mahavir Medical, and Jeevan Medical. The study analyzed the monthly sales (November to February) of six major brands: Zovirax (GSK), Acivir (Cipla), Acyprove, Acloveer, Occuvir, and Aclorex. The results indicate that Acivir

(Cipla) consistently shows the highest sales in most medical stores, suggesting strong market dominance and customer preference. Zovirax (GSK) also demonstrates significant sales but is comparatively lower due to higher pricing. Other brands such as Acyprove, Acloveer, Occuvir, and Aclorex show moderate to lower market share, possibly influenced by price variation and brand awareness. Overall, the study highlights that price, brand reputation, and availability significantly influence the market share of acyclovir brands in the region. This analysis can be useful for pharmacists, healthcare professionals, and pharmaceutical companies to understand market trends and optimize product positioning.

KEYWORDS: Acyclovir, Market Share, Brand Comparison, Antiviral Drugs, Pharmaceutical Marketing, Sales Analysis, Drug Pricing, Cipla, GSK.

➤ INTRODUCTION

• What is survey?

A product survey is research gathering comments and opinions from various people regarding a product regarding a product. It aims to learn how the market reacts to the product, what customers like best and what could be improved.^[1]

• What is a product survey?

Simply put, a product survey is a tool that a company can use to learn what their users think about their product. Running a survey before launching a product means you get to see what people really want and need,

With a product survey you will have the tools to do this, as it enables you to gain a valuable insights throughout the entire lifecycle of your product from its Initial concept ideas right through to customers satisfaction. Only 50 percent of product launches meet business target.

It is the best approach to understanding exactly what customers think and perceives about your new business venture. So you created a great product but want to know what your customers feel about it?

• Why use surveys?

Surveys are incredibly versatile methods of research that allow you to transform feedback into data, Find out how your customers feel about your brand, measure employee engagement, or explore market segment all possible with a survey. Surveys are versatile, valuable, and vital to your market research.

However, a survey isn't a stand-alone solution. It can work alongside other survey methods, such as focus groups, field studies, observation, and market analysis, to help you get a clear picture of your market and decide what direction to take.

• Importance of conducting a survey

Surveys are important because they allow you to collect honest feedback and information. It provides useful information that could be used to employ improvements and used to gain an

understanding of the behavior, preferences and opinions of a group of people concerning a subject.^[1,2]

Different Types of Survey Methods:

Different surveys serve different purposes, which is why there are a number of them to choose from. "What are the types of surveys I should use," you ask? Here's a look at the 18 types of survey methods researchers use today, Different types of survey methods help provide different kinds of information or insights that you seek.^[2]

Types of Survey Methods:

1. Interview method
2. Online Survey Method
3. Intercept Survey
4. Focus Group Survey
5. Telephone Survey
6. Paper based Survey
7. SMS Survey
8. Mail Survey
9. Social Media Survey
10. Mobile Survey

1. Interviews

Also known as in-person surveys or household surveys, this used to be one of the most popular types of survey to conduct, Researchers like them because they involve getting face-to-face with individuals, Of course, this method of surveying may seem antiquated when today we have online surveying at our fingertips. However, interviews still serve a purpose. Researchers conduct interviews when they want to discuss something personal with people. For example, they may have questions that may require extensive probing to uncover the truth. Sure, some interviewees may be more comfortable answering questions confidentially behind a keyboard. Often, in-person interviews are recorded on camera. This way, an expert can review them afterward. They do this to determine if the answers given may be false based on an interviewee's change in tone, A change in facial expressions and body movements may also be a signal they pick up on.

2. Online Survey Method

Online survey are one of the most popular types of survey methods for good reason. First, they are accessible, economical, and easy to share at the click of a button, Second, they are fast - you can get responses within hours, If not minutes. Third, they come with extra features such as templates, images, skip logic, compulsory questions, or a minimum character count.

In this method, questionnaires are distribute digitally to respondents, making it easy o collect responses quickly and efficiently.

3. Intercept Survey

While interviews tend to choose respondents and have controls in place, intercept surveys (or "man on the spot") surveys are conducted at certain locations or events. This involves having an interviewer, or multiple interviewers, scoping out an area and asking people, generally at random, for their thoughts or viewpoints on a particular topic.

In this method, people are intercepted in places such as hospital, pharmacies or clinics and asked question on the spot.

4. Focus Group Survey

These types of surveys are conducted in person as well. However, focus groups involve a number of people rather than Just one individual. The group ls generally small but demographically diverse and led by a moderator. The focus group may be sampling new products, or to have a discussion around a particular topic, often a hot-button one.

The purpose of a focus group survey is often to gauge people's reaction to a product in a group setting or to get people talking, interacting—and yes, arguing—with the moderator taking notes on the group's behavior and attitudes. This is often the most expensive survey method as a trained moderator must be paid. In addition, locations must be secured, often in various cities, and participants must be heavily incentivized to show up. Gift cards in the \$75100 range for each survey participant are the norm.

5. Telephone Surveys

Most telephone survey research types are conducted through random digit dialing (RDD). RDD call reach both listed and unlisted numbers, Improving sampling accuracy. Telephone surveys started in the 1940s. In fact, in a recent blog we recount how the predictions for the

1948 presidential election were completely wrong because of sampling bias in telephone surveys, Rising in popularity in the late 50s and early 60s when the telephone became common in most American households,

Telephone surveys are no longer a very popular method of conducting a survey, Why? Because many people refuse to take telephone surveys or simply are not answering calls from a number they don't recognize.

6. Paper Surveys

Many feel that paper surveys are a thing of the past, But paper surveys help to get responses from difficult-to-reach audiences. Moreover, a paper survey is the best alternative when the respondent cannot access Its online version, Paper surveys in conjunction with online surveys can boost response rates,

What's more, not everyone is tech-savvy enough to be at ease with online surveys. For example, senior citizens may prefer a paper-based survey. So they are printed on a white background and in easy-to-read large fonts.

7. SMS Text Surveys

Many people rarely using their phone to talk anymore and ignore calls from unknown members. This has given rise to the SMS (Short Messaging Service) text survey, SMS surveys are delivered via text to people who have opted in to receive notifications from the sender. This means that there is usually some level of engagement, improving response rates. The one downside is that questions typically need to be short, and answers are generally 1-2 words or simply numbers (this is why many NPS surveys, gauging customer satisfaction, are often conducted via SMS text) Be careful not to send too many text surveys, as a person can optout just as easily, usually by texting STOP.

8. Mail-in Surveys

These are delivered right to respondents doorsteps! Mail surveys were frequently used before the advent of the internet when respondents were spread out geographically and budgets were modest. After all, mail-in surveys didn't require much cost other than the postage.

Email surveys are one of the most effective surveying methods as they are delivered directly to your audience via their online account. They can be used by anyone for just about anything and are easily customized for a particular audience Another good thing about email surveys is

you can easily see who did or did not open the survey and make improvements to it for a future send to increase response rates. You can also A/B test subject lines, imagery, and so on to see which is more effective.

9. Social Media Surveys

There are more than 3.5 billion people are using social media worldwide, a number projected to increase to almost 4.5 billion in 2025. This makes social media extremely important to marketers and researchers. Using platforms such as Facebook, Twitter, Instagram, and the new Threads, many companies and organizations send out social media surveys regularly.

Because people check their social media accounts quite regularly, t's a good way to collect responses and monitor changes in satisfaction levels or popular opinion.

10. Mobile Surveys

Mobile traffic has now overtaken desktop computers as the most used device for accessing the internet, with more than 54% of the share, But don't fret - you don't have to create an entirely new survey to reach people on their phones or tablets. Online poll makers like Survey Legend are responsive, so when you create a desktop version of a survey, it automatically becomes mobile-friendly. The survey renders, or displays, on any device or screen regardless of size, with elements on the page automatically rearranging themselves, shrinking or expanding as necessary.

➤ INTRODUCTION ABOUT ACYCLOVIR:

- Acyclovir is one of the most widely used antiviral drugs employed in the treatment of viral infections caused by the Herpes Simplex Virus (HSV) and Varicella Zoster Virus (VZV).
- It was developed as a selective antiviral agent by Gertrude B. Elion and her research team in the late 1970s and is considered a major breakthrough in antiviral chemotherapy. Acyclovir belongs to the class of synthetic purine nucleoside analogues and exhibits potent antiviral activity with comparatively low toxicity toward normal host cells.
- Acyclovir acts by inhibiting viral DNA synthesis and replication. After entering the infected cell, the drug is converted into its active triphosphate form by viral thymidine kinase. The activated drug selectively inhibits viral DNA polymerase and prevents further elongation of viral DNA chains, thereby stopping viral replication.

- Due to this selective mechanism of action, Acyclovir is highly effective against Herpes Simplex Virus type 1 (HSV-1), Herpes Simplex Virus type 2 (HSV-2), and Varicella Zoster Virus (VZV).^[3]
- Acyclovir is commonly used in the treatment of genital herpes, herpes labialis, herpes encephalitis, chickenpox, and shingles. It is available in various dosage forms including tablets, capsules, topical creams, ointments, and intravenous injections, making it suitable for both local and systemic therapy.
- The drug is generally well tolerated and associated with minimal adverse effects, which has contributed to its widespread clinical acceptance and therapeutic use worldwide.
- The introduction of Acyclovir revolutionized the management of herpes virus infections and significantly improved patient outcomes by reducing the severity, duration, and recurrence of infections.
- Furthermore, the discovery of Acyclovir paved the way for the development of several newer antiviral agents such as Valacyclovir and Famciclovir. Even today, Acyclovir remains one of the most important and commonly prescribed antiviral drugs in modern medicine because of its safety, efficacy, and cost-effectiveness.^[4,5]

➤ **HISTORY**

- Acyclovir was developed by Gertrude B. Elion and her research team during the 1970s as a selective antiviral drug effective against herpes virus infections.
- The antiviral activity of Acyclovir against herpes viruses was first reported in scientific studies published in 1977 and 1978.
- Acyclovir became one of the first highly successful antiviral drugs because of its selective action against virus-infected cells and low toxicity toward normal cells.
- The drug was introduced for medical use in the early 1980s and rapidly became the standard treatment for infections caused by Herpes Simplex Virus (HSV) and Varicella Zoster Virus (VZV).
- Acyclovir revolutionized antiviral therapy and later inspired the development of newer antiviral agents such as Valacyclovir and Famciclovir.
- Today, Acyclovir is included in the World Health Organization's List of Essential Medicines and remains one of the most widely prescribed antiviral medications worldwide.^[6-8]

➤ **THERAPEUTIC USES OF ACYCLOVIR**

- Acyclovir is primarily used for the treatment and management of infections caused by Herpes Simplex Virus (HSV) and Varicella Zoster Virus (VZV).
- It is widely used in the treatment of Herpes Simplex Virus type-1 (HSV-1) infections such as herpes labialis (cold sores) and oral herpes infections
- Acyclovir is effective in the treatment of Herpes Simplex Virus type-2 (HSV-2) infections including genital herpes and recurrent herpes infections.^[11]
- It is used in the management of Herpes Simplex Encephalitis, a severe viral infection affecting the brain and central nervous system.
- Acyclovir is commonly prescribed for the treatment of Varicella Zoster Virus infections such as chickenpox (varicella) and shingles (herpes zoster).
- The drug is used prophylactically in immunocompromised patients, including organ transplant recipients and cancer patients, to prevent herpes virus infections.
- Intravenous Acyclovir is used in severe or life-threatening herpes infections, especially in hospitalized patients.
- Topical Acyclovir formulations are used for localized skin and mucosal herpes infections to reduce pain, itching, and lesion healing time.
- Acyclovir is also used in neonatal herpes infections to reduce complications and improve survival rates in newborns.^[7-9]

➤ **LITERATURE REVIEW:**

1. **Dheeraj kumar et al. (2025)** focused on the development, characterization, and therapeutic efficacy of acyclovir cream. The review highlights that acyclovir is a widely used topical antiviral drug for treating herpes simplex virus (HSV) infection, including cold sores and genital herpes. It explain that acyclovir works by selectively inhibiting virus multiplication with minimal toxicity to host cells. The study also discusses the evolution of acyclovir formulation from oral to topical dosage forms. Various formulation factors such as pH, viscosity, excipients and stability of drugs. From the review literature, it can be concluded that acyclovir remain a first line antiviral drug for HSV infection. future research should focus on improving drug delivery system and overcoming resistance issue.
2. **A. Gupta et al. (2023)** focused on the analytical methodologies for estimation of acyclovir as key members of anti-viral agent Herpes simplex virus (HSV) is a viral

infection that primarily targets oral and genital organs in humans. Acyclovir is a widely prescribed anti-viral agent used in the infection caused by herpes simplex virus (HSV). This article emphasizes several analytical techniques, including spectrophotometry, High-performance liquid chromatography, High-performance thin-layer liquid chromatography, Ultra performance liquid chromatography, and Liquid chromatography/Mass detection for the quantification of acyclovir in different matrices like biological fluids and Pharmaceutical formulation. This review describes how to determine the presence of utilizing acyclovir in different analytical techniques alone or in combination with another drug. In conclusion, examining analytical techniques for acyclovir has demonstrated the validity and suitability of the present methodologies. Acyclovir will, however, be used more widely in pharmaceutical and clinical research if these techniques are improved, better detection is made possible, and technology continues to grow in this area

3. **A. Majewska et al. (2022)** reviewed the progress of anti-herpetic drug 40 years after the introduction of acyclovir and evaluated the need for new therapeutic agents. The authors reported that acyclovir and its derivatives, such as valacyclovir and famciclovir, remain the standard treatment for herpes simplex virus (HSV), varicella-zoster virus (VZV), and cytomegalovirus (CMV) infections, primarily acting by inhibiting viral DNA polymerase and blocking viral replication. In addition, the authors emphasized ongoing research focused on novel antiviral strategies, including drugs with new mechanisms of action and immunomodulatory approaches, although no current therapy can completely eradicate latent herpes virus infection. Overall, the study concluded that despite the continued effectiveness of acyclovir and its derivatives, there is a clear need for the development of new anti-herpetic drugs with improved safety, efficacy, and the ability to target latent infections.
4. **M. S. G. Assis et al. (2021)** conduct the study for enhance therapeutic with acyclovir in management of herpes simplex encephalitis. Acyclovir is an antiviral drug poorly absorbed in the gastrointestinal tract due to its hydrophilicity, with low oral bioavailability (~20%). Although acyclovir is prescribed in the management of herpes simplex encephalitis (HSE), the disease has a poor prognosis, particularly if the treatment is delayed, reaching mortality rates of 70% if left untreated. Thus, high acyclovir doses are administered by intravenous (IV) infusion, usually at a dosage of 10 mg kg⁻¹ 8-hourly in adults with normal renal function. However, the mortality related to HSE treated

with acyclovir remains high (~20%) and permanent sequelae are commonly reported after 1 year (~50%). This review analyzed clinical trials following IV acyclovir administration. Novel insights aiming to improve drug bioavailability were reviewed, including acyclovir or its prodrugs, leading to the systemic distribution of the drug or drug targeting. Much research effort has been made to improve antiviral therapy, searching for delivery systems increasing acyclovir bioavailability by non-invasive pathways, such as oral and nasal pathways, or parenterally administered nanotechnology-based systems leading to drug targeting. Nanocarriers administered by non-invasive pathways represent feasible alternatives to treat HSE, even though not be industrially manufactured yet. The study concluded that there are novel insights intending to improve acyclovir bioavailability by non-invasive routes. However, these strategies are mainly based on nanocarriers with the drug and they did not reach the step of pharmaceutical manufacturing yet.

➤ DRUG PROFIL OF ACYCLOVIR

• Drug Class

Acyclovir is an antiviral drug belonging to the class of synthetic purine nucleoside analogues used for the treatment of viral infections caused by Herpes Simplex Virus (HSV) and Varicella Zoster Virus (VZV).^[12]

• Drug Indications

1. Oral Acyclovir Formulations

Acyclovir tablets and capsules are indicated for the treatment of herpes simplex infections, genital herpes, herpes labialis, chickenpox, and herpes zoster (shingles). It is also used for the suppression of recurrent HSV infections in immunocompromised and immunocompetent patients.

2. Intravenous Acyclovir

Intravenous Acyclovir is indicated for severe HSV infections such as herpes encephalitis, neonatal herpes infections, and severe varicella-zoster infections in immunocompromised patients.

3. Topical Acyclovir

Topical Acyclovir cream or ointment is used for the treatment of herpes labialis (cold sores) and localized herpes simplex skin infections.^[13]

- **Mechanism of Action**

Acyclovir acts by inhibiting viral DNA synthesis and replication. It is first converted into acyclovir monophosphate by viral thymidine kinase inside infected cells and then further converted into its active triphosphate form. The active drug selectively inhibits viral DNA polymerase and terminates viral DNA chain elongation, thereby preventing multiplication of the virus. ^[14,15]

➤ **Molecular Weight-** 225.20 g/mol

➤ **IUPAC Name**

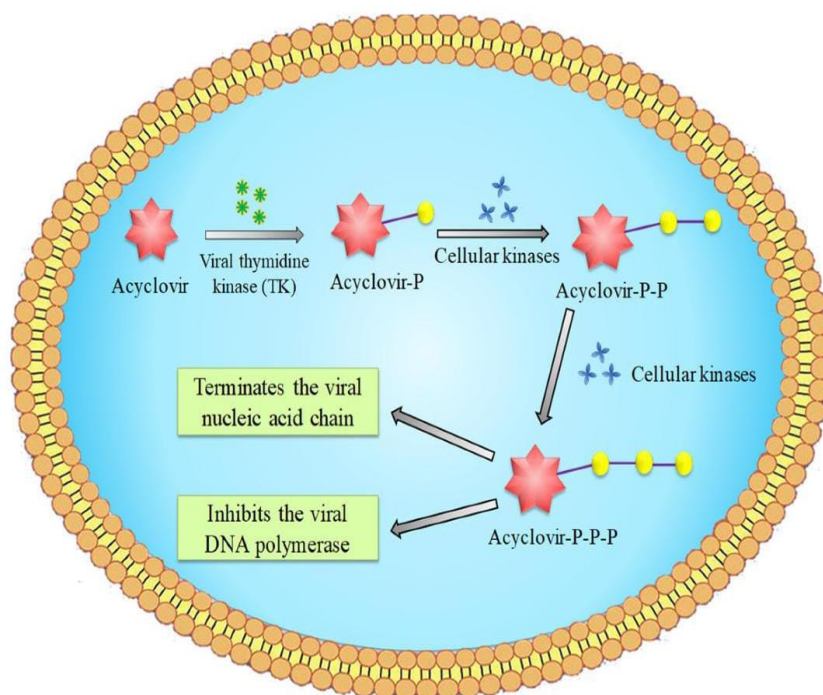
2-amino-1,9-dihydro-9-[(2-hydroxyethoxy)methyl]-6H-purin-6-one

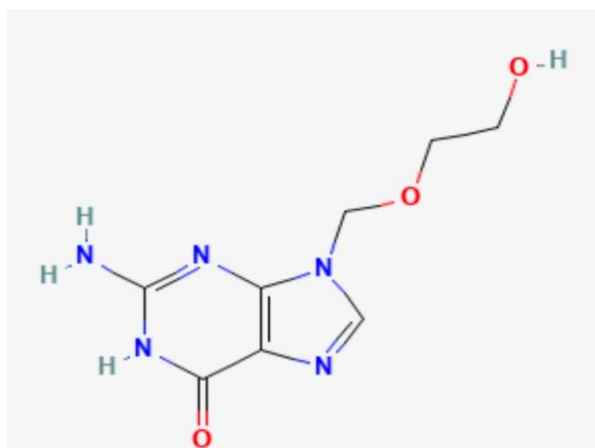
➤ **Melting Point-** 256-257°C

➤ **Solubility-** Slightly soluble in water

➤ **Storage Temperature-** Store at 20°C to 25°C in a dry and cool place away from moisture and direct sunlight. ^(14,15)

- **STRUCTURE OF ACYCLOVIR**



**ACYCLOVIR**

➤ METHODOLOGY

1. Questionnaire (Chemist)

- Which Brand of Acyclovir is mainly prescribed by doctors?
- Do you provide Acyclovir as an OTC drug?
- Do you ask the patient for substitute if prescribed brand is not available?
- How many brands of Acyclovir are available at your medical store?
- How should this medication be stored to maintain its effectiveness?
- Which Brand is more Effective?

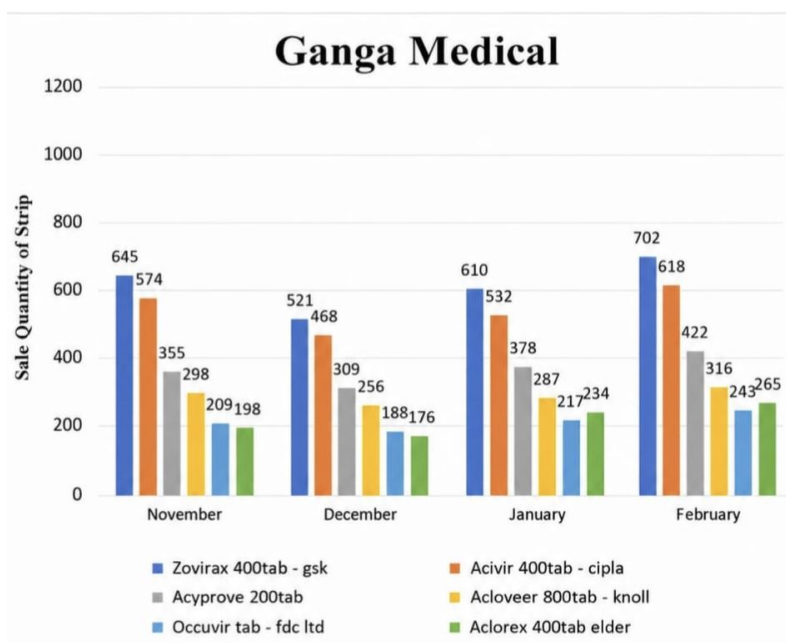
2. Questionnaire (Doctors)

- Can Acyclovir be taken during pregnancy?
- Do you prescribe Acyclovir in combination with other drugs?
- What are the side effects of Acyclovir?
- How does Acyclovir work against viral infections?
- Are there any long-term side effects of Acyclovir?
- Are there any lifestyle changes or precautions patients should take while on this medication?

➤ **LIST OF DIFFERENT BRANDS OF ACYCLOVIR**

Brand Name	Strength	Company	Price /Tablet
Zovirax 400tab - gsk	400mg	GSK Pharma Ltd	125 - 155 /10
Acivir 400tab - cipla	400mg	Cipla Ltd	135 - 146 /10
Acyprove 200tab	200mg	Johnlee Ltd	78 - 100 /10
Acloveer 800tab - knoll	800mg	Knoll Healthcare Pvt Ltd	150 - 400 /10
Occuvir tab - fdc ltd	400mg	FDC Ltd	70 - 80 /10
Aclorex 400tab elder	400mg	Elder Pharmaceuticals Ltd	110 - 153 /10

➤ **RESULT AND DISCUSSION**



Graph No. 1.

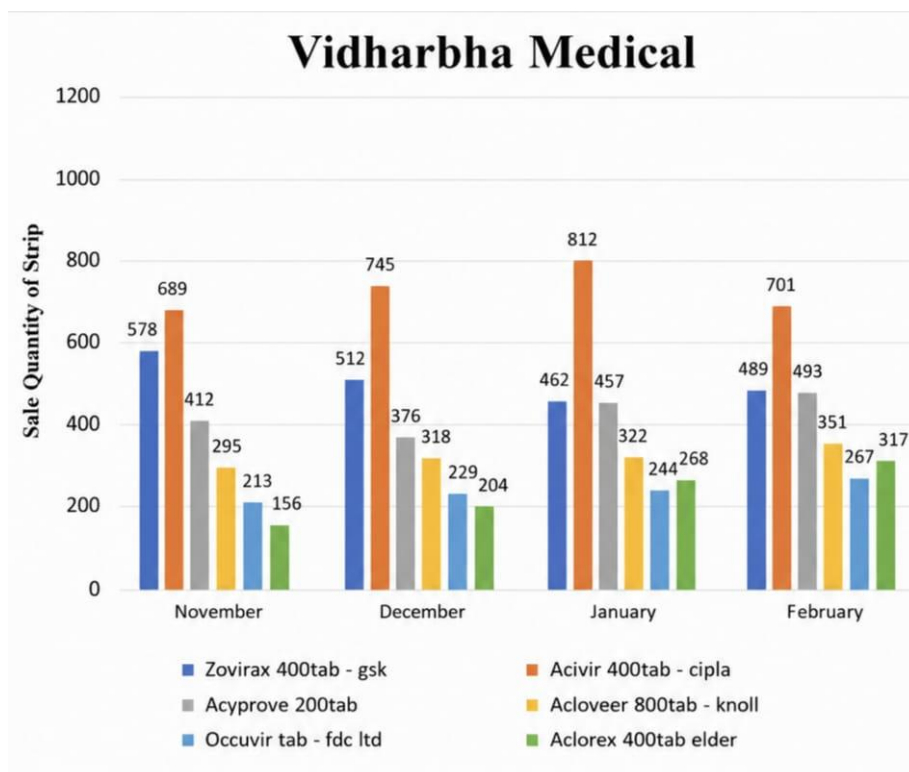
This graph is of Ganga Medical in YAVATMAL.

In this medical 6 brand is available of Acyclovir.

The unit selling of brand -

- **Zovirax 400tab (GSK)**- November 645, December 521, January 610, February 702.
- **Acivir 400tab (Cipla)** - November 574, December 468, January 532, February 618.
- **Acyprove 200tab**- November 35, December 309, January 378, February 422.

- **Acloveer** 800tab (Knoll)- November 298, December 256, January 287, February 316.
- **Occuvir** tab – (FDC Ltd.) - November 209, December 188, January 217, February 243.
- **Aclorex** 400tab (Elder Pharmaceuticals Ltd.) - November 198, December 176, January 234, February 265.



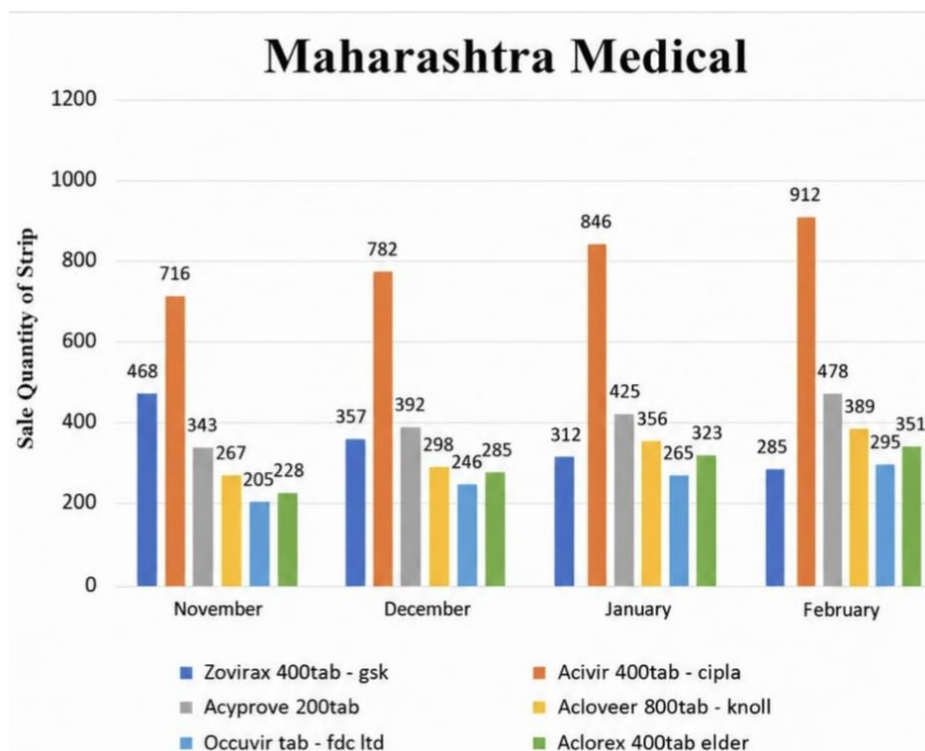
Graph No. 2.

This graph is of Vidharbha Medical in YAVATMAL.

In this medical 6 brand is available of Acyclovir.

The unit selling of brand

- **Zovirax** 400tab (GSK) - November 578, December 512, January 462, February 489.
- **Acivir** 400tab (Cipla) - November 689, December 745, January 812, February 701.
- **Acyprove** 200tab - November 412, December 376, January 457, February 493.
- **Acloveer** 800tab (Knoll) - November 295, December 318, January 322, February 351.
- **Occuvir** tab (FDC Ltd.) - November 213, December 229, January 244, February 267.
- **Aclorex** 400tab (Elder Pharmaceuticals Ltd.) - November 156, December 204, January 268, February 317



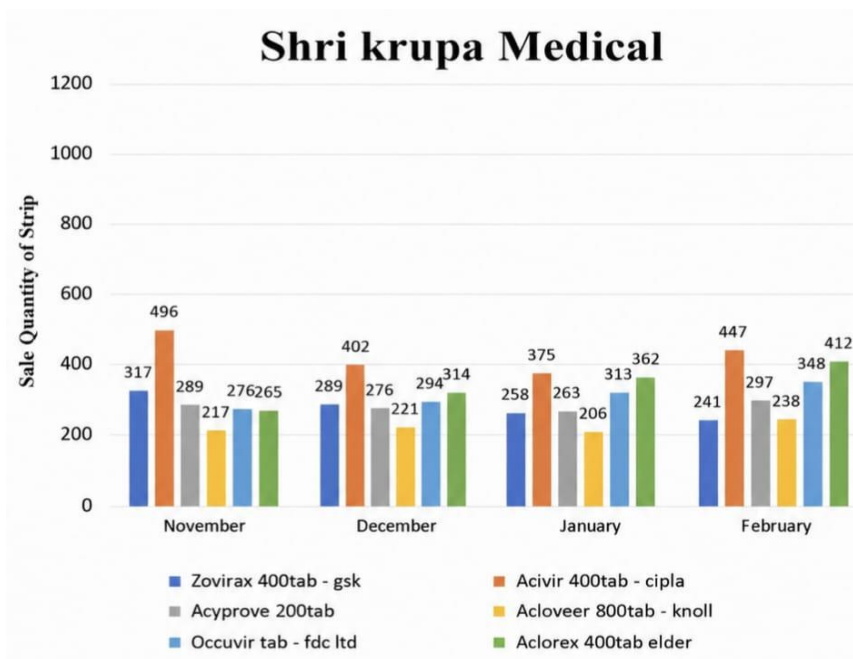
Graph No. 3.

This graph is of Maharashtra Medical in YAVATMAL.

In this medical 6 brand is available of Acyclovir.

The unit selling of brand

- **Zovirax** 400cab (GSK)- November 468, December 357, January 312, February 285.
- **Acivir** 400cab (Cipla) - November 716, December 782, January 846, February 912.
- **Acyprove** 200tab- November 343, December 392, January 425, February 478.
- **Acloveer** 800tab (Knoll) - November 267, December 298, January 356, February 389.
- **Occuvir** tab (FDC Ltd) - November 205, December 246, January 265, February 295.
- **Aclorex** 400tab (Elder Pharmaceuticals Ltd.) - November 228, December 285, January 323, February 351.



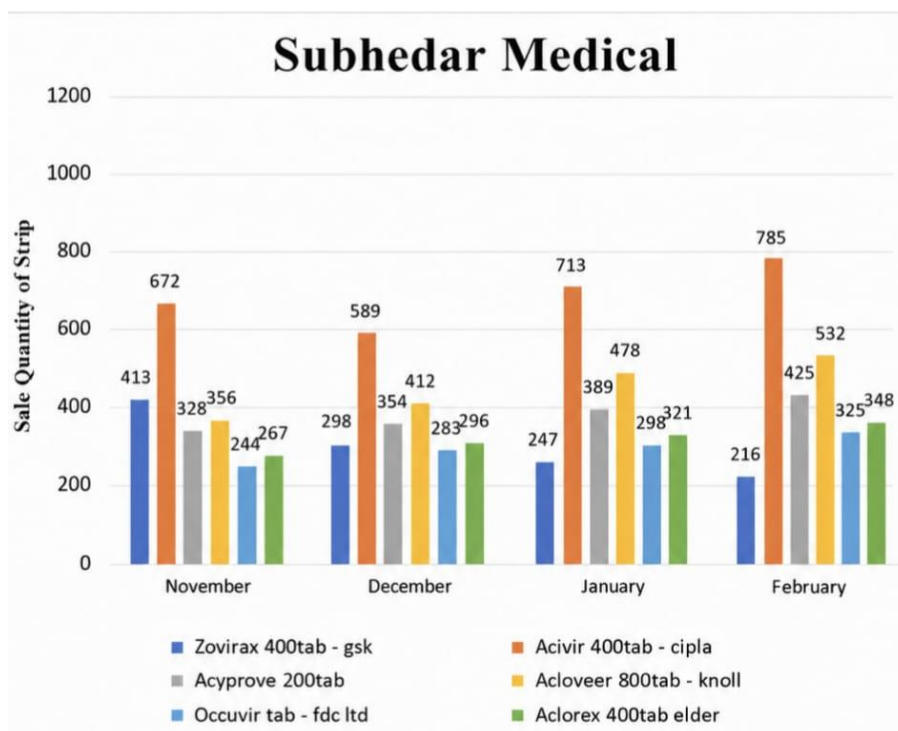
Graph No. 4.

This graph is of Shri Krupa Medical in YAVATMAL.

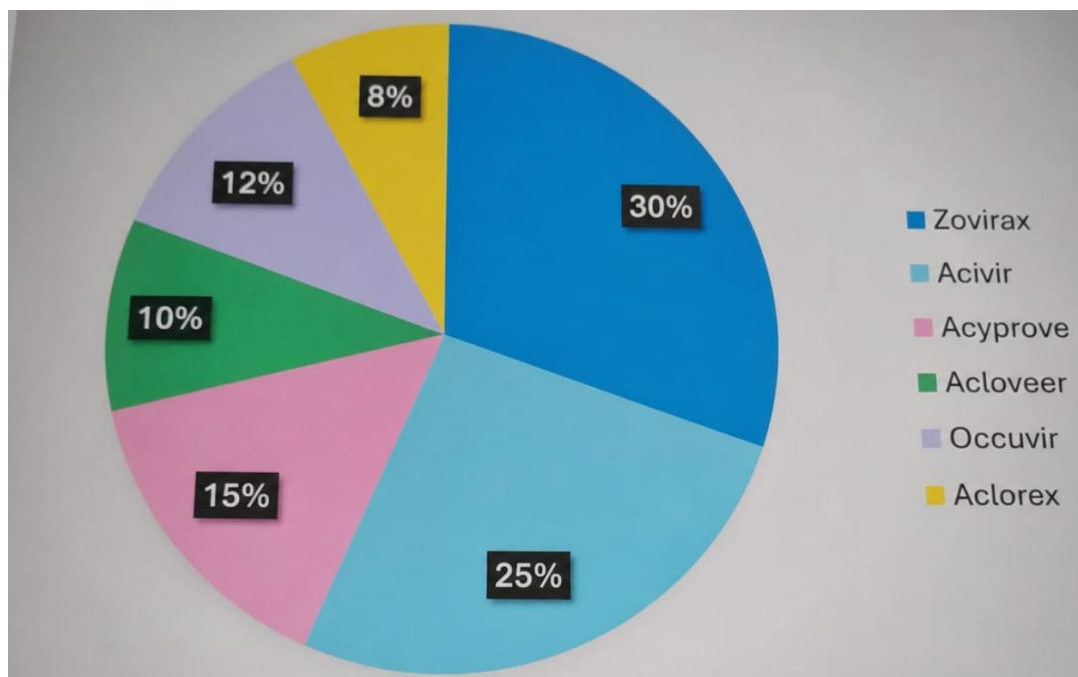
In this medical 6 brand is available of Acyclovir.

The unit selling of brand

- **Zovirax** 400cab (GSK)– November 317, December 289, January 258, February 241.
- **Acivir** 400cab (Cipla) - November 496, December 402, January 375, February 47.
- **Acyprove** 200ab - November 289, December 276, January 263, February 297.
- **Acloveer** 800tab (Knoll) - November 217, December 221, January 206, February 238.
- **Ocuvir** tab (FDC Ltd.)- November 276, December 294, January 313, February 348.
- **Aclorex** 400tab (Elder Pharmaceuticals Ltd.) - November 265, December 314, January 362, February 412.



➤ **RESULT**



➤ **CONCLUSION**

This Product Survey is About the Drug Acyclovir.

- Zovirax is the Highest Selling Brand by GSK Pharma Ltd.
- Acloveer by Knoll Healthcare Pvt Ltd is having Highest Price Per Strip.
- Aclorex is the Lowest Selling Brand by Elder Pharmaceuticals Ltd.

- Occuvir by FDC Ltd is having Lowest Price Per Strip.

This provides insights about pricing and popularity of different Acyclovir brands in the market.

➤ **FUTURE PERSPECTIVE**

The future of Acyclovir market research is promising due to the increasing prevalence of viral infections and demand for effective antiviral drugs. Further studies can be expanded to larger regions with more pharmacies and healthcare professionals to obtain accurate market insights. Focus may also be given to cost-effectiveness, patient compliance, and comparison with newer antivirals like Valacyclovir. Pharmaceutical companies are expected to improve affordability, availability, and formulation strategies to enhance market share and patient outcomes.

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