Summer Training At

Lupin Pharmaceuticals Ltd
(Apr0 9- June 01, 2012)

To Find the Market Share of Various Brands of Insulin Available in the Market of Jaipur City

By
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Under the Guidance of
Dr. Nirmal Kumar Gurbani

Post Graduate Diploma in Pharmaceutical Management
2011-2013

Institute of Health Management Research,
Jaipur
2012

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Certificate

This is to certify that Mr. Ashish D Chavan from Institute of Health Management Research, Jaipur has undergone Summer Training at Lupin Pharmaceuticals Ltd, Jaipur from 09th April, 2012 to 01th June, 2012.

The candidate himself carried out the project. His approach to the study has been sincere, scientific and analytical. This summer training is partial fulfillment of the course requirement is recommended for the award of post graduate diploma in pharmaceutical management.

I wish him success in all his future endeavors.

Dr. P.R. Sodani
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TO WHOM IT MAY CONCERN:

I congratulate **Mr. Ashish D Chavan** Student of PGDPM-03 of IIHMR Jaipur on successful completion of his summer training from Lupin Ltd from 09.04.12 to 30.05.12.

During summer training he successfully completed his project on topic

"To find the market share of various brands of insulin available in the market of Jaipur City"

I WISH HIM FOR HIS BETTER FUTURE.

6/8/12

Kulwinder Singh

Regional Sales Manager

Lupin Diabetes Care

Jaipur

ACKNOWLEDGEMENT

My sincere thanks to all those who have been the driving force behind the successful completion of my Internship. I take this opportunity to express my sincere gratitude to **Mr.Kulwinder Singh** (Regional Sales Manager-Lupin Fortia) and **Mr .Ankit Khandelwal** (Sales Executive) for his guidance and support during my internship. I am also thankful to all the pharmacists who willingly provided the relevant information for carrying out research in my internship.

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I am grateful to the administration, finance department, colleagues and support staff of **Lupin Pharmaceuticals Ltd, Jaipur** for their valuable assistance during the project.

Finally, yet importantly, I would like to express my heartfelt thanks to my beloved parents for their blessings, my friends/classmates for their help and wishes for the successful completion of this project.

ASHISH D CHAVAN

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CHAPTER 1

INDIAN PHARMA INDUSTRY – AN OVERVIEW

The demand for pharmaceutical products in India is significant and is driven by low drug penetration, rising middle-class & disposable income, increased government & private spending on healthcare infrastructure, increasing medical insurance penetration etc.

The Indian pharmaceutical industry is growing at about 8 to 9 percent annually according to "A Brief Report Pharmaceutical Industry in India," published in January 2011. The Pharmaceutical industry in India meets around 70% of the country's demand for bulk drugs, drug intermediates, pharmaceutical formulations, chemicals, tablets, capsules, orals and injectables. There are approximately 250 large units and about 8000 Small Scale Units, which form the core of the pharmaceutical industry in India (including 5 Central Public Sector Units).

I. Current Scenario:

India's pharmaceutical market grew at 15.7 per cent during December 2011. Globally, India ranks third in terms of manufacturing pharma products by volume. According to McKinsey, the Pharmaceutical Market is ranked 14th in the world. By 2015 it is expected to reach top 10 in the world beating Brazil, Mexico, South Korea and Turkey. More importantly, the incremental market growth of US$ 14billion over the next decade is likely to be the third largest among all markets. The US and China are expected to add US$ 200bn and US$ 23bn respectively.

McKinsey & Company's report, "India Pharma 2020: Propelling access and acceptance, realizing true potential," predicted that the Indian pharmaceuticals market will grow to US$55 billion in 2020; and if aggressive growth strategies are implemented, it has further potential to reach US$70 billion by 2020. While, Market Research firm Cygnus' report forecasts that the Indian bulk drug industry will expand at an annual growth rate of 21 percent to reach $16.91 billion by 2014. The report also noted that India ranks third in terms of volume among the top 15 drug manufacturing countries.

Further, McKinsey reports Healthcare grew from 4 per cent of average household income in 1995 to 7 per cent in 2005 and is expected to grow to 13 per cent by 2025.

Diagnostics Outsourcing / Clinical Trials: According to the estimates, the Indian diagnostics and labs test services, in view of its growth potential, is expected to reach Rs159.89 billion by FY2013. The Indian market for both therapeutic and diagnostic antibodies is expected to grow exponentially in the coming years. Further, more than 60% of the total antibodies market is currently dominated by diagnostic antibodies.

Some of the major Indian pharmaceutical firms, including Sun Pharma, Cadila Healthcare and Piramal Life Sciences, had applied for conducting clinical trials on at least 12 new drugs in 2010, indicating a growing interest in new drug discovery research.

Generics: India tops the world in exporting generic medicines worth US$ 11 billion. The Indian generic drug market is to grow at a CAGR of around 17 per cent between 2010-11 and 2012-13.

Over the next few years, it is expected that the patent laws will provide impetus to the launch of patent-protected products. Such products have the potential to capture upto a 10% share of the market by 2015, implying the market size of US $2bn.

R&D: According to Battelle R&D magazine, gross expenditure on R&D (GERD) by India for 2012 was projected to be US$ 41 billion in purchasing power parity terms, which works out to 0.8 per cent of GDP. This is low both in absolute terms and as a proportion of GDP compared to other countries. This is partly because the size of the R&D base and absorption capacity is not commensurate with requirements.

As per estimates in 2010-11, largest R&D expenditures attracted from pharmaceutical sector. R&D intensity for the pharmaceuticals sector was much higher than that for other sectors. Although there have been substantial increases in growth rates of patents filed in India during the last decade, the share of patents filed for work in India through indigenous research is less than 20 per cent of the total. A White Paper on R&D prepared by consultancy firm Deloitte in July 2011 estimates that more than 300 MNCs have set up R&D centres in India.

Demand: The demand for pharmaceutical products in India is significant and is driven by many factors like low drug penetration, rising middle-class & disposable income, increased government & private spending on healthcare infrastructure, increasing medical insurance penetration, changing demographic pattern and rise in chronic lifestyle-related diseases; adoption of product patents, and aggressive market penetration driven by the relatively smaller companies.

According to CARE research demand triggers for the growth are:

- Between 2010 and 2015 patent drugs worth US$171 bn are estimated to go off-patent leading to a huge surge in generic products.
- High margin pharma export business is expected to grow at a higher rate than domestic market given increased in outsourcing activities.
- Increased M&A activities is set to consolidate the market which widens geographic reach, strengthens distribution network and venture into new therapeutic segments.
- Indian companies files the highest number of ANDA's with USFDA leading to greater chances of approvals and thereby increasing export to regulated markets especially the US.
- There are currently approximately 175 USFDA and nearly 90 UK-MHRA approved pharma manufacturing plants in India which can supply high quality pharma products globally.
- Growth from rural markets will outstrip overall pharma market growth, albeit at lower margins, given lower penetration of 18-19% coupled with rising income level and awareness.
- Biopharmaceuticals is another potential high growth segment for Indian pharma growing at double digit driven by the vaccines market.

II. Major Pharmaceutical Companies

India based pharmaceutical companies are not only catering to the domestic market and fulfilling the country's demands, they are also exporting to around 220 countries. They are exporting high quality, low cost drugs to countries such as the US, Kenya, Malaysia, Nigeria,

Russia, Singapore, South Africa, Ukraine, Vietnam, and more. Currently, the US is the biggest customer and accounts for 22 percent of the sector's exports, while Africa accounts for 16 percent and the Commonwealth of Independent States (CIS) places around eight percent of orders, as per Research and Market report.

For most of the pharma companies, domestic business contributes in the range of 20-50% of the overall revenue. US business contribution stands at 20-30% and remaining comes from the Row markets.

Leading Indian Players by Sales

Company	Sales in US $Mn	Year End
Cipla	6,368.06	March 2011
Ranbaxy Lab	5,687.33	December 2010
Dr Reddy's Labs	5,285.80	March 2011
Sun Pharma	1,985.78	March 2011
LupinLtd	4,527.12	March 2011
Aurobindo Pharma	4,229.99	March 2011
Piramal Health	1,619.74	March 2011
Cadila Health	2,213.70	March 2011
Matrix Labs	1,894.30	March 2010
Wockhardt	651.72	December 2011

Trends:

- All companies, including MNCs, have increased their field force in the last one year.
- Indian companies are entering into strategic tie-ups with MNCs to strengthen their product portfolio.
- Companies are expanding their presence in rural markets.
- Acquisitions by MNCs to gain quick foothold in the fastest growing Indian pharma market.

Most of the Pharma companies have shown considerable decline in growth in the first half of 2011. The slowdown is widely visible in the Chronic and Acute categories. Anti-invective, pain and gastro together contribute 1/3rd of the total pharma market. The pharma companies have started facing challenges in domestic market due to increase in competition from unlisted MNCs in this segment. They are rapidly expanding their field force to extend their geographical reach. Companies like Cipla, Torrent and IPCA which are mainly focused on Indian market are already feeling the heat. Growth rates of companies such as Cadila, Dr. Reddy and Ranbaxy have already come down. On the other hand Lupin and Sun are showing growth due to the shift of focus towards specialty therapies, where competition is relatively low.

Basing on the changing macro factors and economic growth Emkay Research has expected the growth estimates of the pharma companies to decrease. It cut down the domestic growth estimates for Cadila, Cipla, Dr. Reddy, IPCA, Torrent and Unichem for FY12 and FY 13 by 2% to 5% and retained the growth estimates for Lupin, Ranbaxy, Sun, GSK and Pfitzer.

Indian Pharma – Domestic Growth Expectations

Company	FY12 Domestic Growth	Earlier growth estimates
Cadila	12%	15%
Cipla	10%	15%
Dr. Reddy's	10%	15%
Glenmark	16%	16%
IPCA	10%	17%
Lupin	19%	19%
Ranbaxy	12%	12%
Sun Pharma	15%	18%
Torrent	12%	12%
Unichem	5%	9%
GSK	13%	13%
Pfizer	14%	14%

Source: Emkay Research

Major recent M&As:

- Sun-Merck JV: Sun and Merck have formed JV to develop, manufacture and commercialize new combinations and formulations of innovative, branded generics in the Emerging Markets. Under the JV, Sitagliptin and Sitagliptin+Metformin have already been commercialized in the Indian markets.
- Lupin-Lilly JV: They entered into collaboration to promote and distribute Lilly's Huminsulin range of products in India and Nepal.
- Cadlia_Bayer JV: The venture will sell brands from both companies in Indian markets.
- Biocon-Pfizer JV: This collaboration will give Pfizer exclusive rights to commercialize Biocon products globally including co-exclusive rights with Biocon in Gernmany, India and Malaysia.
- Universal Medicines – Aventis: Aventis has acquired Universal Medicines for over US$ 100mn.

III. Government Initiatives:

Government initiatives in the public health sector have recorded some noteworthy successes over time with focus on investments related to better medical infrastructure, rural health facilities etc.

- 100 per cent FDI is permitted for health and medical services under the automatic route.
- The National Rural Health Mission (NHRM) had allocated US$ 10.15 billion for the upgradation and capacity enhancement of healthcare facilities.

- Moreover, in order to meet revised cost of construction, in March 2010 the Government allocated an additional US$ 1.23 billion for six upcoming AIIMS-like institutes and upgradation of 13 existing Government Medical Colleges.

As a result, FDI inflow in hospital and diagnostic centres was US$ 1.1 billion during April 2000 and November 2011, according to st Department of Industrial Policy & Promotion (DIPP) data. FDI inflow in medical and surgical appliances stood at US$ 472.6 million during the same period. And the drugs and pharmaceuticals sector has attracted FDI worth US$ 5.0 billion between April 2000 and November 2011

Budget 2012: Union Budget 2012-13, as expected, is positive for the pharmaceutical sector. The government has again increased budgetary allocation for healthcare spending, which would be an overall positive for the sector. Indian pharmaceutical companies have been investing on the R&D front to tap opportunities in the domestic and global markets. To encourage the same, the weighted deduction on R&D expenditure to 200% (in-house research) was extended for a further period of five years. R&D sops would continue to be positive for the sector as a whole.

Budget Proposal	Impact
Proposal to extend weighted deduction of 200% for R&D expenditure in an in-house facility for a further period of five years beyond March 31, 2012.	Positive for all Indian pharmaceutical companies.
Allocation for NRHM proposed to be increased from Rs 18,115cr in FY2011-12 to Rs 20,822cr in FY2012-13.	Positive for all pharmaceutical companies.
Proposal to continue to allow repatriation of dividends from foreign subsidiaries of Indian companies at a lower tax rate of 15% up to March 2013.	Positive for all pharmaceutical companies, mainly Indian companies, as they generate the highest revenue from export markets.
Introduced MAT on partnership firm.	Would negatively impact Cadila Healthcare and Sun Pharmaceuticals. Since we have already factored in higher Tax provision for FY2013, we are not changing our FY2013 estimates for both the companies.

CHAPTER 2

COMPANY PROFILE

About Lupin

The company was named after the Lupin flower because of the inherent qualities of the flower and what it personifies and stands for. The Lupin flower is known to nourish the land, the very soil it grows in. The Lupin flower is also known to be tolerant of infertile soils and capable of pioneering change in barren and poor climes. The Lupin flower and bean pods have also long been used as food and sources of nourishment, thus protecting and nurturing life.

Lupin was founded in 1968[1] with the same vision, a company that would develop new pioneering drugs to combat, prevent and eradicate life-threatening diseases, by manufacturing drugs of the highest social priority, thus nurturing, protecting and enriching society, very much like the Lupin flower.

Vision

"An Innovation Led, Transnational Pharmaceutical Company"

Corporate overview

Headquartered in Mumbai, India, Lupin Limited today is an innovation led transnational pharmaceutical company producing a wide range of quality, affordable generic and branded formulations and APIs for the developed and developing markets of the world.

Lupin first gained recognition when it became one of the world's largest manufacturers of Tuberculosis drugs. The Company today has significant market share in key markets in the Cardiovascular (prils and statins), Diabetology, Asthma, Pediatrics, CNS, GI, Anti-Infective and NSAIDs therapy segments, not to mention global leadership positions in the Anti-TB and Cephalosporin segments. The Company's R&D endeavors have resulted in significant progress in its NCE program. The Company's foray into Advanced Drug Delivery Systems has resulted in the development of platform technologies that are being used to develop value-added generic pharmaceuticals. Lupin's world class manufacturing facilities, spread across India and Japan, have played a critical role in enabling the companies realize its global aspirations. Benchmarked to International standards, these facilities are approved by international regulatory agencies like US FDA, UK MHRA, Japan's MHLW, TGA Australia, WHO, and the MCC South Africa.

Lupin's drugs and products reach over 70 countries in the world. Today, Lupin has emerged as the 5th largest and the fastest growing Top 5 company in the U.S (by prescriptions), the only Asian company to achieve that distinction. The company is also the fastest growing, top

[1] Source: Company website

5 pharmaceutical players in India (ORG IMS) and the fastest growing top 10 Generic players in Japan and South Africa. (IMS), Today, Lupin also has the unique distinction of being the fastest growing top 10 Generics players in the two largest pharmaceutical markets of the world – The U.S (ranked 5th by prescriptions & growing at 52 %) and Japan (ranked 7th and growing at23%).Lupin's Consolidated Revenues and Profit after Tax were Rs. 57,068 million and Rs. 8,626 million for FY 2010-11.

R & D

Lupin's Research and Development covers the following broad areas:

- Generics Research
    - Process Research
    - Pharmaceutical Research
- Advanced Drug Delivery Systems (ADDS) Research
- Intellectual Property Management
- Novel Drug Discovery and Development (NDDD)
- Biotechnology Research

Product Range

- Anti-allergy
- Anxiolytic
- Anti-asthma
- Anti-bacterial/fungal creams
- Cardiovascular
- Cephalosporin
- Anti-diabetic
- Gastro-intestinal
- Herbal
- Iron preparations
- Laxatives
- Anti-malarial
- Multi-vitamins
- NSAID
- OA/RA
- Anti-oxidants
- Quinolones
- Anti-TB
- Anti-viral

TABLE1-Lupin's products in various segments[2]

Product	Therapeutic range	Ranking
TONACT	CVS	3
GLUCONORM	Anti Diabetic	4
RABLET	Gastro Intestinal	2
RCINEX	Anti TB	1
RAMISTAR	CVS	2
AKT	Anti TB	1
CLOPITAB	CVS	3
L-CIN	Levofloxacin	1
TELEKAST	Anti-Asthma	3
BUDAMATE	Anti-Asthma	3

(Table 1:- Lupin's products in Various segments)

TABLE2-Lupin's growth in comparison with market (As per March 2011)[3]

Therapeutic segment	Lupin growth %	Market growth%
CVS	21%	18%
Anti-TB	10%	5%
Anti-asthma	28%	14%
Antibiotics+Cephalosporins Oral+Cephaic	1%	14%
Anti-Diabetic	81%	24%
Gastro-Intestinal	22%	17%
CNS	20%	17%
Gynaecology	86%	14%

(Table 2:- Lupin's growth in comparison with market)

[2] Source: Company website
[3] Source: Company website

CHAPTER 3

BACKGROUND OF THE STUDY

Diabetes

Diabetes (diabetes mellitus) is classed as a metabolism disorder. Metabolism refers to the way our bodies use digested food for energy and growth. Most of what we eat is broken down into glucose. Glucose is a form of sugar in the blood - it is the principal source of fuel for our bodies.

When our food is digested the glucose makes its way into our bloodstream. Our cells use the glucose for energy and growth. However, glucose cannot enter our cells without insulin being present - insulin makes it possible for our cells to take in the glucose.

Insulin is a hormone that is produced by the pancreas. After eating, the pancreas automatically releases an adequate quantity of insulin to move the glucose present in our blood into the cells, and lowers the blood sugar level.

A person with diabetes has a condition in which the quantity of glucose in the blood is too elevated (hyperglycemia). This is because the body either does not produce enough insulin, produces no insulin, or has cells that do not respond properly to the insulin the pancreas produces. This results in too much glucose building up in the blood. This excess blood glucose eventually passes out of the body in urine. So, even though the blood has plenty of glucose, the cells are not getting it for their essential energy and growth requirements.

Types of diabetes

- **Diabetes Type 1** - You produce no insulin at all.
- **Diabetes Type 2** - You don't produce enough insulin, or your insulin is not working properly.
- **Gestational Diabetes** - You develop diabetes just during your pregnancy

Diabetes Types 1 and 2 are chronic medical conditions - this means that they are persistent and perpetual. Gestational Diabetes usually resolves itself after the birth of the child.

Symptoms of Diabetes

People can often have diabetes and be completely unaware. The main reason for this is that the symptoms, when seen on their own, seem harmless. However, the earlier diabetes is diagnosed the greater the chances are that serious complications, which can result from having diabetes, can be avoided.

Most common diabetes symptoms:

- Frequent urination
- Disproportionate thirst

- Intense hunger
- Weight gain
- Unusual weight loss
- Increased fatigue
- Irritability
- Blurred vision
- Cuts and bruises don't heal properly or quickly
- More skin and/or yeast infections
- Itchy skin
- Gums are red and/or swollen - Gums pull away from teeth
- Frequent gum disease/infection
- Sexual dysfunction among men
- Numbness or tingling, especially in feet and hands

Type 1 diabetes

Type 1 diabetes is an autoimmune disease - the person's body has destroyed his/her own insulin-producing beta cells in the pancreas.

People with Diabetes Type 1 are unable to produce insulin. Most patients with Diabetes Type 1 developed the condition before the age of 40. Approximately 15% of all people with diabetes have Type 1.

Type 1 diabetes is fatal unless the patient regularly takes exogenous insulin. Some patients have had their beta cells replaced through a pancreas transplant and have managed to produce their own insulin again.

Type 1 diabetes is also known as juvenile diabetes or childhood diabetes. Although a large number of diabetes Type 1 patients become so during childhood, it can also develop after the age of 18. Developing Type 1 after the age of 40 is extremely rare.

Type 1, unlike Type 2, is not preventable. The majority of people who develop Type 1 are of normal weight and are otherwise healthy during onset. Exercise and diet cannot reverse Type 1. Quite simply, the person has lost his/her insulin-producing beta cells. Several clinical trials have attempted to find ways of preventing or slowing down the progress of Type 1, but so far with no proven success.

A C-peptide assay is a lab test that can tell whether somebody has Type 1 or Type 2. As external insulin has no C-peptide a lack of it would indicate Type 1. The test is only effective when ALL the endogenous insulin has left the body - this can take several months.

Type 2 diabetes

A person with diabetes type 2 either:

1. Does not produce enough insulin or
2. Suffers from 'insulin resistance'. This means that the insulin is not working properly.

The majority of people with Type 2 have developed the condition because they are overweight. Type 2 generally appears later on in life, compared to Type 1. Type 2 is the most common form of diabetes.

In the case of insulin resistance, the body is producing the insulin, but insulin sensitivity is reduced and it does not do the job as well as it should do. The glucose is not entering the body's cells properly, causing two problems:

1. A build-up of glucose in the blood.
2. The cells are not getting the glucose they need for energy and growth.

In the early stages of Type 2 insulin sensitivity is the main abnormality - also there are elevated levels of insulin in the blood. There are medications which can improve insulin sensitivity and reduce glucose production by the liver.

As the disease progresses the production of insulin is undermined, and the patient will often need to be given replacement insulin. Excess abdominal fat is much more likely to bring on Type 2 Diabetes than excess fat under the skin.

Many experts say that central obesity - fat concentrated around the waist in relation to abdominal organs - may make individuals more predisposed to develop Type 2 diabetes.

Central obesity does not include subcutaneous fat - fat under the skin. The fat around your waist - abdominal fat - secretes a group of hormones called adipokines. It is thought that adipokines may impair glucose tolerance.

The majority of people who develop diabetes Type 2 were overweight during the onset, while 55% of all Type 2 patients were obese during onset. Sometimes all the patient needs is to do more exercise, lose weight and eat fewer carbs.

It is not uncommon for people to achieve long-term satisfactory glucose control by doing more exercise, bringing down their bodyweight and cutting down on their dietary intake of carbohydrates.

However, despite these measures, the tendency towards insulin resistance will continue, so the patient must persist with his/her increased physical activity, monitored diet and bodyweight.

If the diabetes mellitus continues the patient will usually be prescribed orally administered anti-diabetic drugs. As a person with Type 2 does produce his/her own insulin, a combination of oral medicines will usually improve insulin production, regulate the release of glucose by the liver, and treat insulin resistance to some extent.

If the beta cells become further impaired the patient will eventually need insulin therapy in order to regulate glucose levels.

Insulin

Insulin is a hormone secreted by specialized cells in the pancreas in response to (among other things), increased blood glucose concentration. The primary role of insulin is to control the transport of glucose from the bloodstream into the cells. After consuming a meal, insulin enhances the uptake of the energy nutrients (amino acids, glucose, and fatty acids). Insulin helps maintain blood glucose within normal limits and stimulates protein synthesis, glucose synthesis in the liver and muscle, and fat synthesis.

Insulin is the "key" that opens the doors in cells to let glucose (sugar) in. The body needs glucose for energy. In people with diabetes, either the pancreas no longer produces any/enough insulin or the insulin no longer fits into the "keyholes" to open the doors to the cells. If glucose cannot get into cells, it accumulates in the bloodstream.

Normally blood glucose is 90 mg/dl fasting and before meals. It should be below 120 mg/dl one hour after meals. It is especially important for pregnant diabetics to follow a special diet, exercise, and/or inject insulin to keep blood glucose within normal range.

Everyone is different and has a unique lifestyle. Health care providers will work with diabetics to tailor regimens (diet, exercise, medication) to fit their needs. Once a plan is made, it needs to be religiously followed. Everything works together. Once injected, insulin starts to lower glucose levels. Meals and snacks must be eaten to keep glucose levels from plunging too low. Regular meals and snacks eaten throughout the day help keep glucose levels as stable as possible. Exercise fits into the overall picture by lowering glucose levels and, in turn, lowering insulin needs.

There are many types of insulin. It can be confusing to try to understand them all. What follows is a general overview:

There are three forms of insulin: pork, beef, and human (made in a lab through genetic engineering). Insulin varies in the timing of the action. Please note that each individual insulin product performs differently. In addition, insulin performs differently for every individual and at various times of the day. The insulin package insert must be read for more accurate information. In general, these are the three main types of insulin:

- Regular (rapid or short-acting) - Reaches bloodstream within 30 minutes, peaks about two to three hours after injection, and remains in blood for about six hours.

- NPH and lente (intermediate-acting) - Reaches bloodstream in about four hours, peaks seven to eight hours after injection, and remains in blood for up to 18 hours.

- Ultralente (long-acting) - Reaches bloodstream in about four to six hours, peaks about 14 to 18 hours after injection, and remains in blood for up to 24 hours.

There are also premixed mixtures such as Humulin 50/50 or Humulin 70/30 which have various action times.

Diabetics may be prescribed more than one insulin type. Doctors, nurses, and diabetes educators teach diabetics how to draw, mix, and administer their own injections. Insulin can be administered via syringe, jet injectors, or pumps. Syringes today have short micro-fine needles that are almost painless. Jet injectors are devices that shoot the insulin through the skin in a jet stream. Insulin pumps are small computerized devices that deliver insulin throughout the day via a tube connected to a needle inserted into your skin.

In pregnant diabetics, the placenta produces hormones that make insulin less effective. Insulin needs might double or even triple during the course of pregnancy. The insulin regimen may change every 5 to 10 days as insulin needs increase with a corresponding increase in injections. Because of this, regular and frequent blood glucose monitoring is vital.

CHAPTER 4

RESEARCH METHODOLOGY

PROJECT TITLE:

To find the market share of various brands of insulin available in the market of Jaipur city.

OBJECTIVE:

1. To find out the various brands of insulin available in the market.

2. To find out the market share of these brands.

RESEARCH METHODOLOGY

Research Design: Descriptive cross sectional study design

Sampling-

Study area: Jaipur city

Duration: April 9th to June 1st 2012

Method: Systematic Random Sampling Method

Sample size: 150 pharmacists

Data Collection-

Approach: Quantitative data collection

Tool: Structured Questionnaire

Technique: Survey method (face to face interview)

Data Representation & Analysis:-

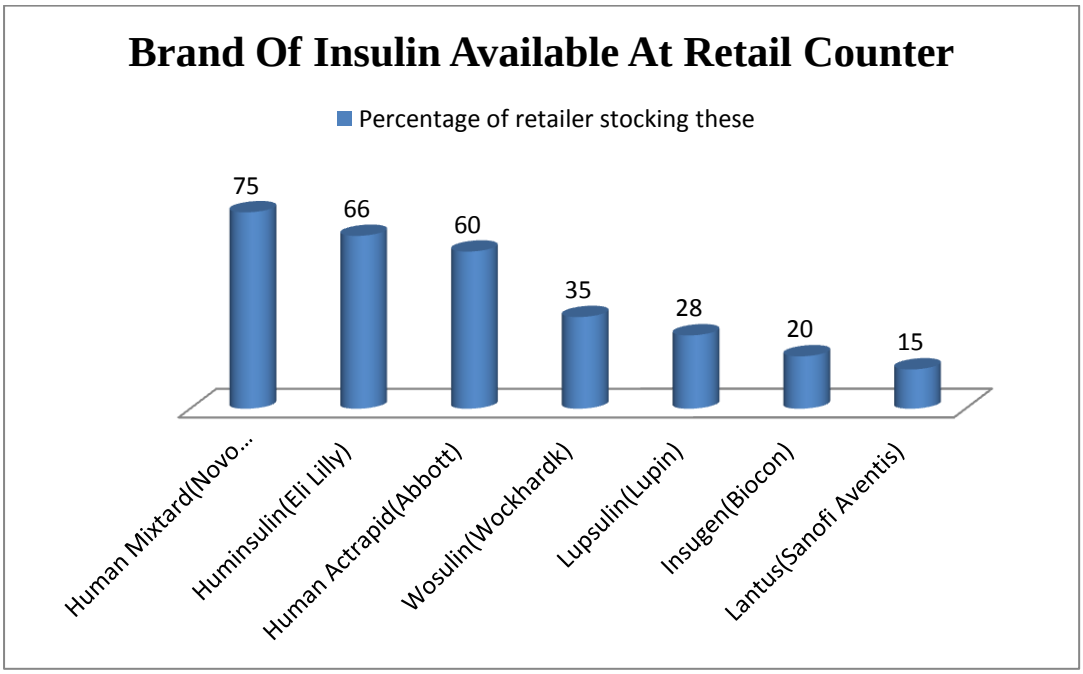
MS excel will be used for graphical representation and for analyzing

CHAPTER 5

DATA ANALYSIS AND INTERPRETATION

- **Various brands of insulin available at the retail store**

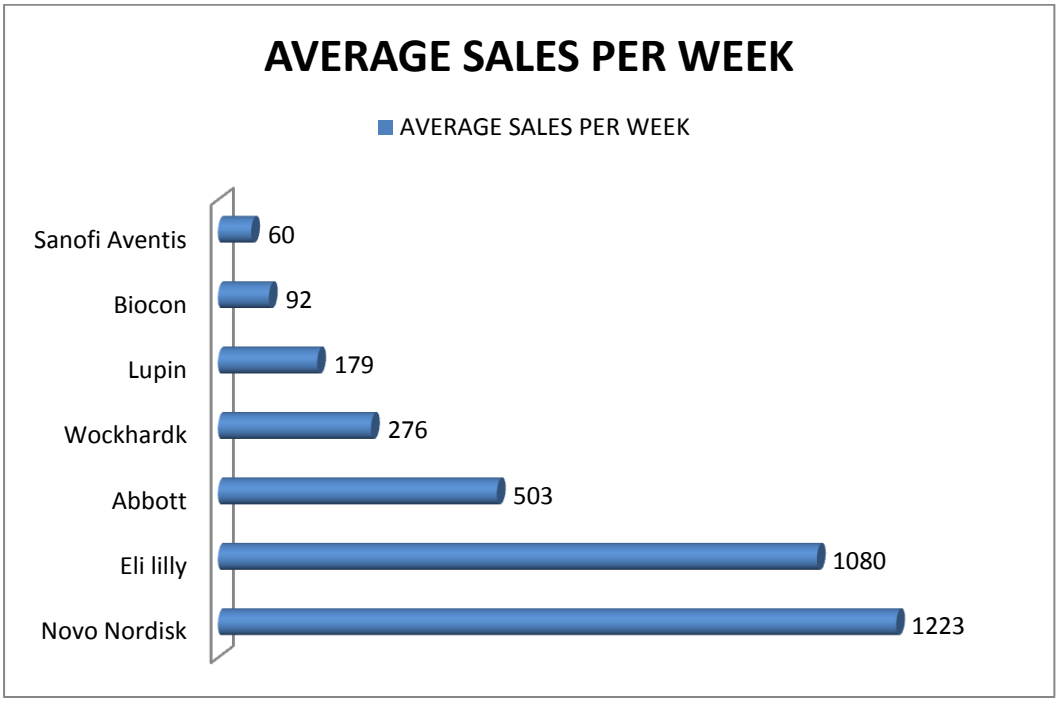
Name Of Brand Of Insulin	Percentage Of Retailer Stocking These
Human Mixtard(Novo Nordisk)	75
Huminsulin(Eli Lilly)	66
Human Actrapid(Abbott)	60
Wosulin(Wockhardk)	35
Lupsulin(Lupin)	28
Insugen(Biocon)	20
Lantus(Sanofi Aventis)	15



Inference: From the graph, we can come to know that Human mixtard of Novo Nordisk and Huminsulin of Eli Lilly has a good presence over the retail counter which is 75% and 66% respectively followed by Human Actrapid (60%), Wosulin (35%), Lupsulin (28%), Insugen (20%) and Lantus (15%).

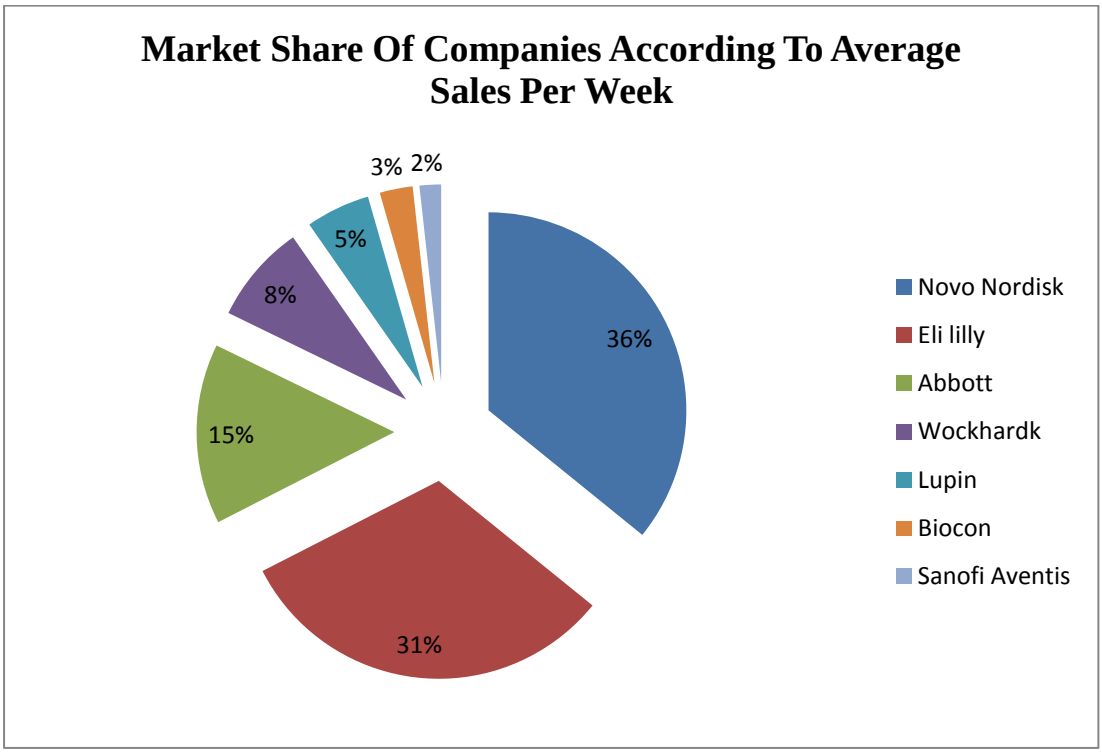
- **Unit Sales of insulin per week**

COMPANY	AVERAGE SALES PER WEEK
Novo Nordisk	1223
Eli lilly	1080
Abbott	503
Wockhardk	276
Lupin	179
Biocon	92
Sanofi Aventis	60



Inference: Human mixtard of Novo Nordisk has highest unit of sales of 1223 per week, followed by Huminsulin of Eli lilly(1080), Abbott (503), Wockhardk (276), Lupin (179), Biocon (92), Sanofi Aventis (60).

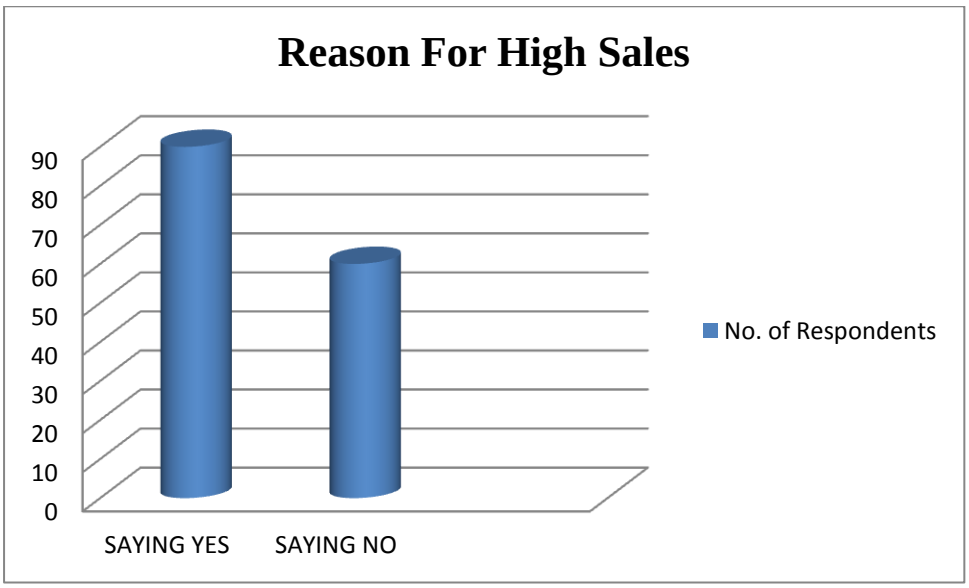
- **Market share of companies according to unit sales of insulin per week**



Inference: Novo Nordisk has the highest selling brand with a market share of 36%, followed by Eli Lilly (31%), Abbott (15%), Wockhardk (8%), Lupin (5%), Biocon (3%), Sanofi Aventis (2%).

- **Reasons for high sales of Brand**

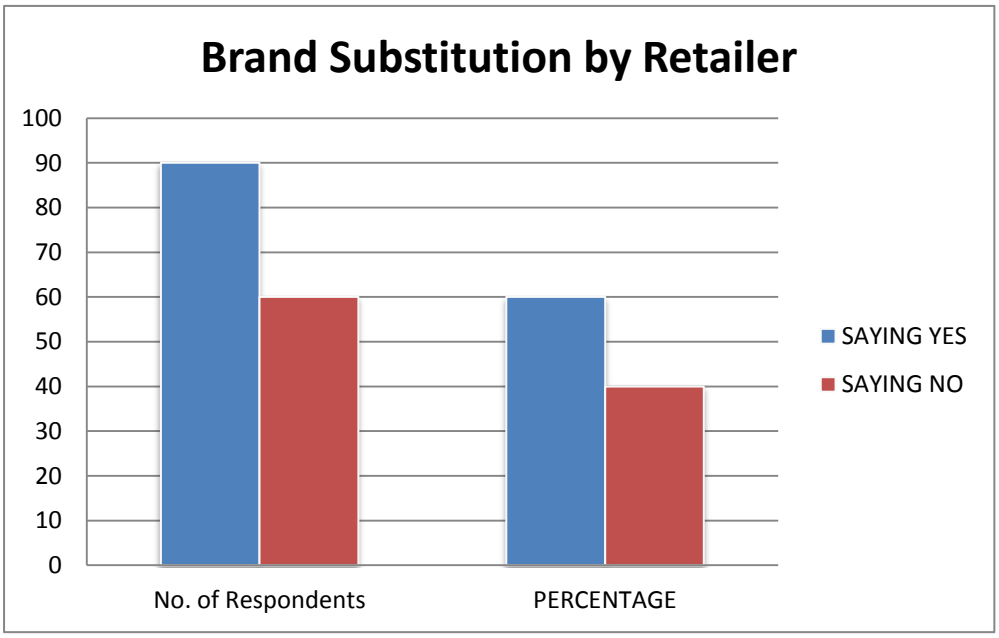
Reasons	Perecntage Of Retailers
Price	40
Promotion	60
Availability	60



Inference: From the above graph it is concluded that out of various factors of popularity promotion and availability plays a major role. While price has a little effect on popularity. Because as these are life saving drugs the price factor doesn't affect its high sales.

- **Brand substitution by retailer**

Respondents	No. of Respondents	Percentage
Saying Yes	90	60
Saying No	60	40



Inference: From the above graph it is concluded that a good portion of retailers i.e. 60% are ready for substitution of brand and remaining 40% are not interested for substitution.

CHAPTER 6

FINDINGS AND SUGGESTIONS

Findings

During the project work I found that Novo Nordisk and Eli Lilly dominate the insulin market. There are four other companies also in the market but their relative market share is low in comparison of these two companies. Abbott is in third position, Wockhardk stands fourth and Lupin stands fifth.

Suggestions

From the following suggestions are carried out:

- Company has to undertake aggressive marketing activities.
- The promotional activities to be carried out intensively.
- Company should try to reach extensively all over the geographical area.
- Company should do time to time market research to know present market share.
- Company should enter in this niche market to increase total market share as well as to avoid the future competition**.**

REFERENCES

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3. healthy-ojas.com
4. diabetesinformationhub.com
5. www.lupinworld.com
6. www.sciencedirect.com
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ANNEXURE

QUESTIONNAIRE

Name of the chemist: **Contact no:**

Address of the Chemist:

1) Which brands of Insulin available in the store?

a) b) c)

d) e) f)

g) h) i)

j)

2) Average sales of insulin per month?

a) b) c)

d) e) f)

g) h) i)

j)

3) Reasons for high sales of these brands?

Price ☐

Promotion ☐

Availability ☐

4) Number of prescriptions of these insulin brands by Doctor per month?

5) Does price affect the substitution of brand?

Yes ☐

No ☐