

A blue-tinted illustration of a human torso from the neck down to the waist. The internal organs, including the lungs, heart, and major blood vessels, are visible. The lungs are highlighted in a reddish-pink color, contrasting with the blue body. A white rectangular box is superimposed over the center of the image, containing the title text.

A MARKET INVESTIGATION OF NSCLC DRUGS IN INDIA

MOHD MOONIS

MBA PM-12

BACKGROUND

Lung cancer is a major disease accounting for 6.9% of all new cancer cases in India, according to NCBI data. Within lung cancer, there is a 80-20 split into SCLC and NSCLC. Thus, it is important to study the NSCLC market in India, and what all newly approved drugs are available in the market and at what prices and discounts. A PEST analysis on the same would also go a long way.



METHODOLOGY

PEST ANALYSIS

Political, Economic, Social and Technological factors affecting NSCLC Market in India were studied.

NEWLY PATENTED DRUGS

A selection of India-approved immunotherapy and targeted therapy drugs by major players was listed down and described.

COST ANALYSIS

A cost analysis was conducted for the listed drugs, comparing the list price (M.R.P) with GTN (Discounted price) and GTN % range.

TOOLS

Excel from Microsoft 365 Package was used to conduct the cost analysis and generate graphs.



POLITICAL FACTORS

BILATERAL RELATIONS

- **Indo-China Relations:** Strained relations may reduce API dependency on China and provide long term benefits for Indian Pharma.
- **Indo-US Relations:** Generally pleasant diplomatic relationship will increase drug approvals and business in India.
- **Indo-Russian Relations:** India's refusal to condemn Russian onslaught on Ukraine might affect European Pharma Trade.

POLITICAL SCENARIO IN COUNTRY

- The current BJP government is known for pharma industry-friendly practices. On top of that India has a NCCP (National Cancer Control Programme).
- Policy interventions in the pharmaceutical sector are pushing for creating an environment for innovation so that India can become a leader in discovery of pharmaceuticals and medical technology, as remarked by the PM.



ECONOMIC FACTORS

RAPID INDUSTRIALIZATION

India being a developing nation, policy-wise pushes for economic growth and industrialization, boding well for the Pharma and lung cancer market.

FALLING INR

The falling rupee against Dollar, erodes the profitability of imported NSCLC drugs.

DPCO

Drug Price Control Order, 2013 is an order by the Central Government of India to control rising drug prices across therapies in India. This only allows for an annual increase in drug prices, for any company at the start of the year.

MEDICAL EXPENDITURE

Average medical expenditure increasing in India, boding well for the NSCLC market.



SOCIAL FACTORS

LUNG CANCER AWARENESS

A study on Pink Chain Campaign in India found ignorance (83.1 %), fear (30.1 %) and lethargic attitude (29.3 %) to be the top causes to refuse treatment or lung cancer diagnosis.

AGE OF POPULATION

Average age of Indian population is increasing, , the proportion of older persons is predicted to nearly quadruple to 19.5 percent in 2050. This can account for an increase in NSCLC incidence.

LIFESTYLE

- Dietary habits are thought to be responsible for 10 to 20% of malignancies in India. about 267 million adults (15 years and older) in India (29 percent of all adults) use tobacco.#
- India's HDI in 2014 was 0.586, up 5.77 percent from 2012. India's HDI was 0.647 in 2018. It is increasing as a result of a nearly 60% increase in healthy activities such as yoga, cardio and other exercises.
- This may reduce incidence of NSCLC.



TECHNOLOGICAL FACTORS

TARGETED THERAPY

Anaplastic lymphoma kinase (ALK) Inhibitors, EGFR inhibitors, BRAF inhibitors, ROS1 inhibitors and more are recently established classes of targeted therapy drugs for NSCLC.

SOTORASIB AND ADAGRASIB

Lumakras (Sotorasib) and Mirati (Adagrasib) are poised to be the first in-line therapies for KRAS gene mutated advanced NSCLC metastatic Patients, for which treatment was not available earlier.

IMMUNOTHERAPY

Immunotherapy has been on the rise with drugs like Imfinzi, Tecentriq, Opdivo and Keytruda winning recent approvals. They are immune checkpoint inhibitors.

RADIOTHERAPY

Some recent advances in the radiotherapy space for lung cancer include stereotactic ablative radiation therapy (SABR) and stereotactic body radiation therapy (SBRT).

TOP DOGS IN NSCLC SPACE AND THEIR IMPORTANT PRODUCTS, INDIA



Tecentriq
(Atezolizumab),
Rozlytrek
(Entrectinib)



Lorbriqua/Lorbrena
(Lorlatinib),
Xalkori/Crizalk
(Crizotinib)



Tagrisso
(Osimertinib)



Bristol-Myers Squibb

Opdivo/Opdyta
(Nivolumab)

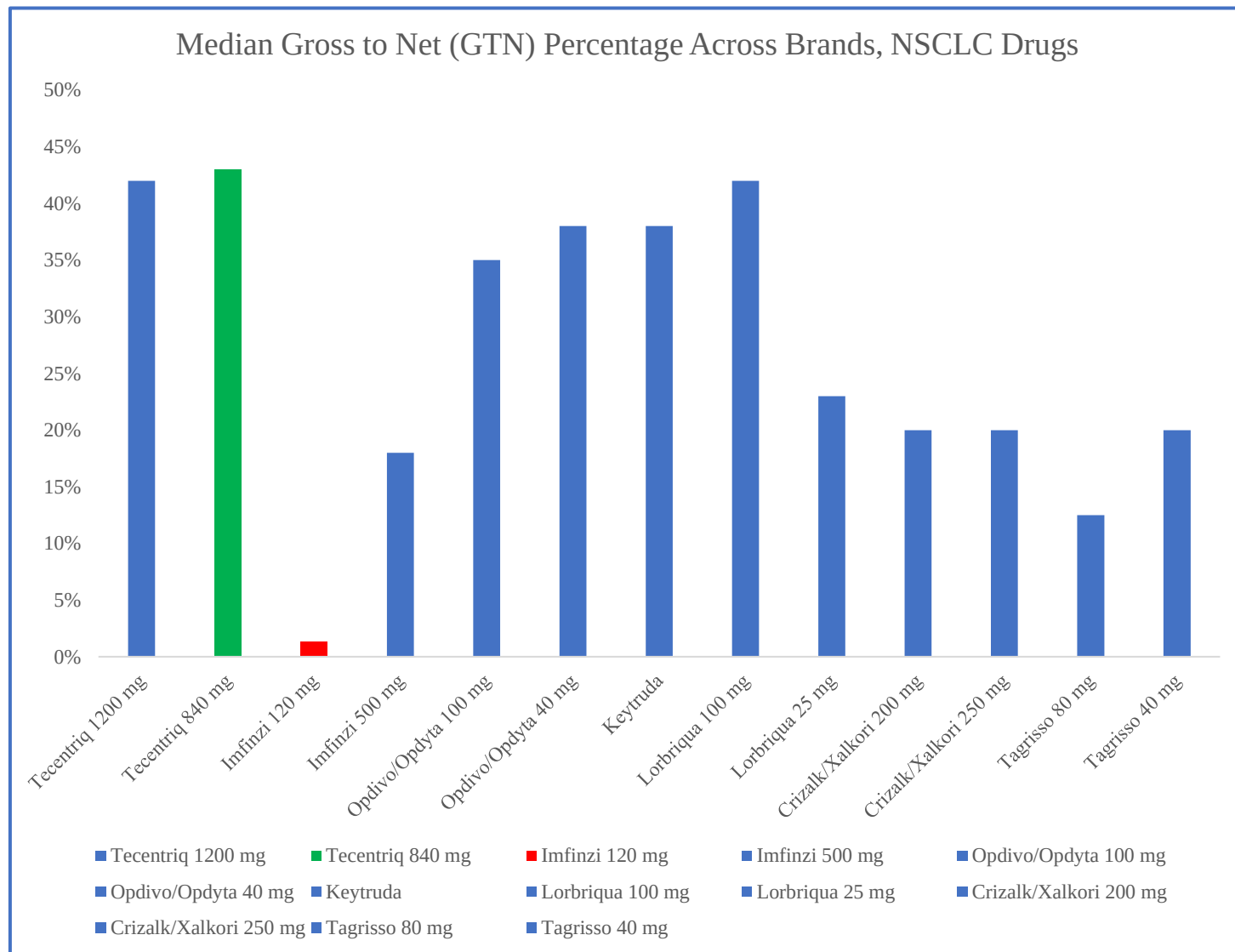


Keytruda
(Pembrolizumab)

NSCLC DRUGS WITH THEIR MEDIAN GTN DISCOUNT AND GTN RANGE

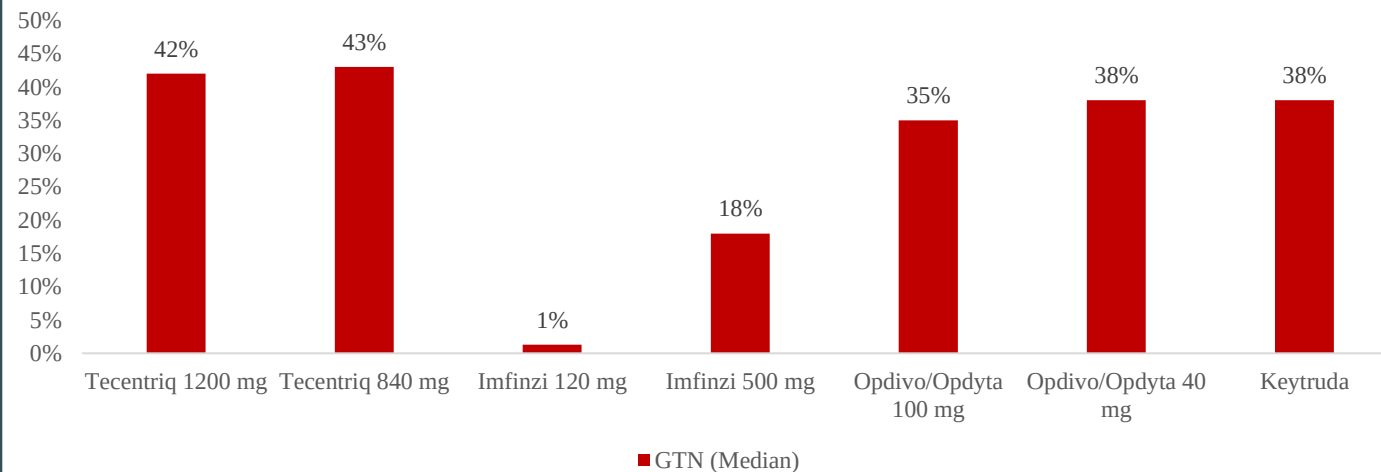
Therapy	Brand	SKU	GTN (range)	GTN (median)
Immunotherapy	Tecentriq	1200 mg/20 mL (20 mL vial)	15%-68%	42.0%
	Tecentriq	840 mg/14 mL (14 mL vial)	18%-68%	43.0%
	Imfinzi	120 mg/2.4 mL injection (1 vial)	N/A	1.3%
	Imfinzi	500 mg/10 mL injection (1 vial)	N/A	18.0%
	Opdivo/Opdyta	10 mg/mL (100 mg vial)	20%-50%	35.0%
	Opdivo/Opdyta	10 mg/mL (40 mg vial)	30%-45%	38.0%
	Keytruda	100 mg/4 mL (4 mL vial)	15%-62%	38.0%
Targeted Therapy	Lorbriqua	100 mg tab (30 unit bottle)	18%-65%	42.0%
	Lorbriqua	25 mg tab (30 unit bottle)	N/A	23.0%
	Crizalk/Xalkori	200 mg cap (60 unit bottle)	N/A	20.0%
	Crizalk/Xalkori	250 mg cap (60 unit bottle)	N/A	20.0%
	Tagrisso	80 mg tab (10 unit pack)	10%-15%	12.5%
	Tagrisso	40 mg tab (10 unit pack)	N/A	20.0%

MEDIAN GTN % ACROSS BRANDS, NSCLC DRUGS

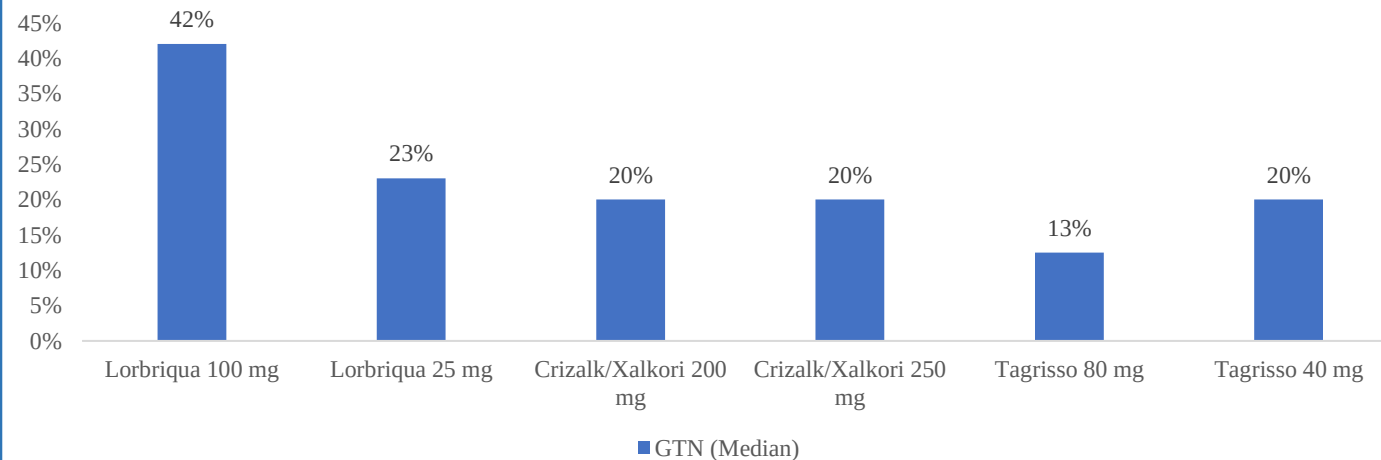


MEDIAN GTN % ACROSS BRANDS, THERAPY COMPARISON

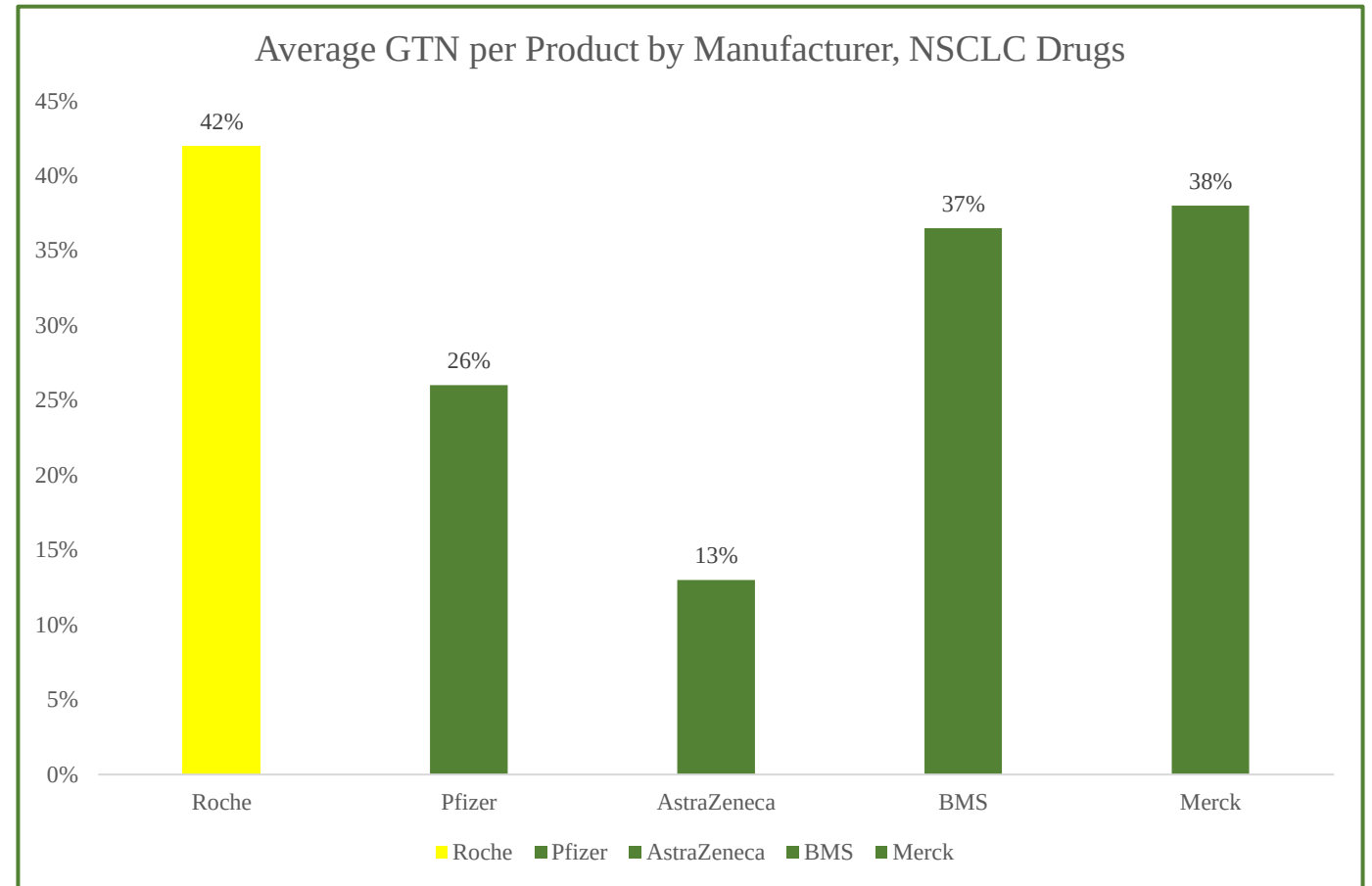
Median Gross to Net (GTN) Percentage Across Brands, NSCLC
Immunotherapy Drugs



Median Gross to Net (GTN) Percentage Across Brands, NSCLC Targeted
Therapy Drugs



AVERAGE GTN/PRODUCT BY MANUFACTURER, NSCLC DRUGS



CONCLUSION

- Roche, Pfizer, AstraZeneca, BMS and Merck are the top oncology market players in India.
- India aims to become independent in the API market long term, which may open doors driving down input costs in the country and aid the pharmaceutical industry.
- India-Russia relations may detrimentally affect the NSCLC market.
- DPCO (Drug Price Control Order), 2013, doesn't allow companies to increase prices in the middle of the year.
- Factors such as increasing average age and increasing lung cancer awareness may positively impact the NSCLC market. Similarly, factors like improving lifestyle may negatively affect the NSCLC market.
- Increasing medical expenditure is likely to aid NSCLC market in future.
- Compared to chemotherapy, immunotherapy and targeted therapy have shown rapid growth in recent years and earned multiple approvals for drugs across companies. There are plenty of immunotherapy and targeted therapy products currently in development across companies and we might just be entering the golden era of advanced cancer care.
- When talking about the most expensive NSCLC drug in India according to MRP and net price, it is the Tecentriq injection, which costs INR 3,96,725/- per 1 vial of 20 mL, and is also the most expensive drug after discount, costing a whopping INR 3,37,126/- at its most expensive.
- When discussing the cheapest NSCLC drug in India, it is Opdivo 10 mg's 40 mL vial, costing INR 39,800/- and INR 28,000/- at its most expensive after discount.
- The highest GTN% was offered in Tecentriq 840 mg (43%) and the lowest in Imfinzi 120 mg (1.3%)
- On an average, immunotherapy drugs provided 30.75% GTN per product while targeted therapy drugs provided about 23%, which shows that immunotherapy drugs are providing more patient friendly discounts.
- By manufacturer, Roche was found to be providing the most discount (42%) and AstraZeneca the least (12.5%).

RECOMMENDATIONS

- India's cancer data is lacking, because we do not gather medical data extensively, for example claims data in U.S. captures a wide variety of patient data, which, although anonymously, gives insight into the burden of a disease and the target population. It also reveals important parameters like treatment rate, biomarker testing rates, gene mutation rates and more. This gaping lack of patient data will affect pricing of drugs in India. We need to step up the gathering of medical data in the country in an efficient and accessible way.
- Companies must capitalize on the fact that lung cancer awareness is severely lacking in the country. They must be prepared to sponsor awareness programmes in the country because that will improve the treatment rate and diagnosis of the disease.
- The therapy costs for most NSCLC drugs are still unbelievably high for a country like India, where the per capita income is still exceptionally low. This, added to the fact that most Indians pay for healthcare out of pocket, ensures that most do not get to avail expensive therapies such as cancer therapy. Thus, to increase the number of new and continuing prescriptions, more GTN discounts must be made available by the companies, especially for targeted therapies.
- There is a need for government sponsored social healthcare programs for cancer patients that covers at least a part of cancer therapy in afflicted patients.

THANK YOU

The content in this presentation has been taken from dissertation report titled **“A MARKET INVESTIGATION OF NSCLC DRUGS IN INDIA”**