

“Market Investigation Study of Surfactant therapies in Neonates in Bangalore City of India”

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Introduction

- Neonatal respiratory distress syndrome (NRDS), also known as hyaline membrane disease (HMD), is a condition of increasing respiratory distress, commencing at or shortly after birth and increasing in severity until progressive resolution occurs among the survivors, usually between the second and fourth day.
- About 1% of all new-born infants are affected with this condition.
- It is due, to insufficiency of pulmonary surfactant and is mainly confined to preterm infants.
- The foetus does not start to produce surfactant until 22-23 weeks gestation.
- By 32-33 weeks, most babies have enough endogenous surfactant.

Literature Review

- **Gallacher DJ, Hart K, Kotecha S. Common respiratory conditions of the newborn. *Breathe* 2016; 12: 30-42.**

As indicated by this examination, Respiratory misery is seen in 6%-7% of babies, the most astounding incidence being among preterm neonates, followed by post-term and term newborn children. It is as of late discovered that the rate of NRDS in late preterm babies has an expanding pattern, which represents almost 33% of kids with NRDS.

- **Jian Wang, Xuehua Liu, Tong Zhu, Chaoying Yan. Analysis of neonatal respiratory distress syndrome among different gestational segments. *Int J Clin Exp Med* 2015;8(9):16273-16279**

In this Study author states that the first hours and days of life are of crucial importance for the newborn infant as the infant adapts to the extra-uterine environment. The baby is helpless against a scope of respiratory maladies, numerous special to this time of early life as the creating liquid filled fetal lungs adjust to the extrauterine condition. The clinical indications of respiratory pain are imperative to perceive and additionally explore, to distinguish the fundamental reason.

Literature Review

- According to author **Coen HMP Willems, Florian Urlichs, Silvia Seidenspinner, Steffen Kunzmann, Christian P Speer, Boris W Kramer** state that, the porcine extracted lung surfactant (poractant alfa) enriched the phagocytosis of apoptotic neutrophils by alveolar macrophages which leads to anti-inflammatory properties.
- According to author **WOLFGANG BERNHARD, JASMIN MOTTAGHIAN, ANDREAS GEBERT, GUNNAR A. RAU, HORST von der HARDT and CHRISTIAN F. POETS**, the surface tension lowering properties of natural surfactants (Curosurf, Alveofact) is equivalent to native surfactant whereas the semisynthetic surfactants (Survanta, Exosurf) were unqualified to indicate surface tension lowering property as compared to native surfactant.
- According to author **Mirhadi Mussavi, Keyvan Mirnia, and Khairollah Asadollahi**, in the Alveofact group, the new cases of pneumothorax was impressively higher, the mean hospital-stay length, mean ventilation time and the new cases of PDA were also impressively higher in the Alveofact group.

Research Question

With the help of this study we can find out the market potential of surfactant in Bangalore city?

Objective

- To estimate the market value and market volume of Surfactant brands in Bangalore (Karnataka).
- To determine the market drivers and challenges for Surfactant.



Research Question

What is the competitive landscape of surfactant brands in Bangalore (Karnataka)?

Objective

- To study the competitor landscape of Surfactant brands in Bangalore (Karnataka).

Research methodology

Research Plan:

- **Research Design:** Non-Probability (convenience Sampling).
- **Data Source:** Primary and secondary research
- **Data collection technique:** Survey
- **Data collection tool:** Researcher administered Semi structured questionnaire.

Sample Design:

- **Target population:** NICU Hospitals and Pharmacy
- **Sampling method:** Non-probability convenience sampling
- **Sample size:** 100 Prescribers and 50 Hospital Pharmacist (at 95% Confidence Interval and 8% Margin of error).
- **Study Location:** Major city of India
- **Duration of Study:** 3 Months.
- **Data Analysis Techniques:** The findings and the information's collected and compiled, analyzed on Microsoft Excel and SPSS.

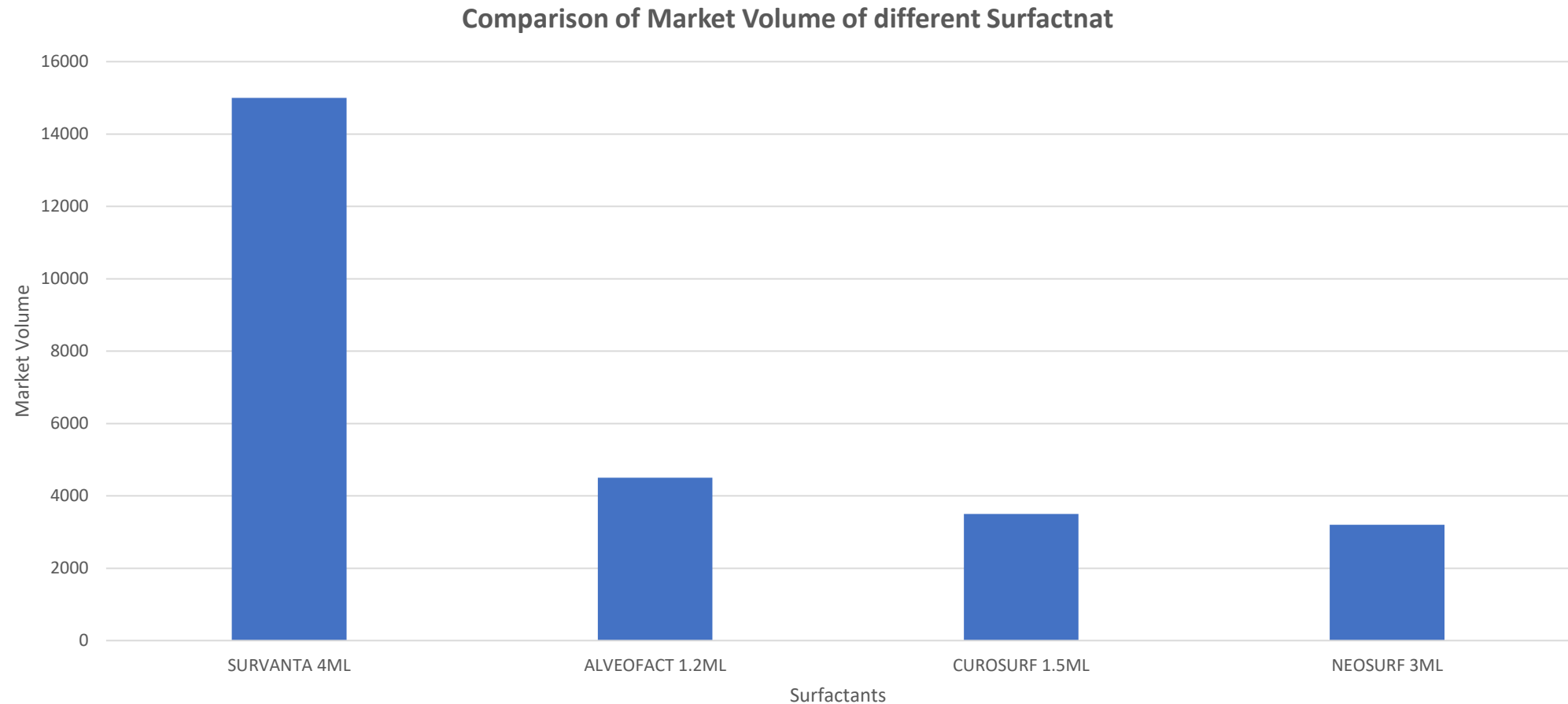
Results & Findings

- The market volume and value were calculated through secondary and using the retailed based model.

SAURFACTANT	No. of Pharmacy	No. of Prescriptions	Vials/Month	ASP(INR)	Market Volume	Market Value (INR)
SURVANTA 4ML	50	150	420	7500	15000	1125000
ALVEOFACT 1.2ML	50	45	178	3500	4500	157500
CUROSURF 1.5ML	50	35	53	6600	3500	231000
NEOSURF 3ML	50	32	48	4200	3200	134400
Total					26200	1647900

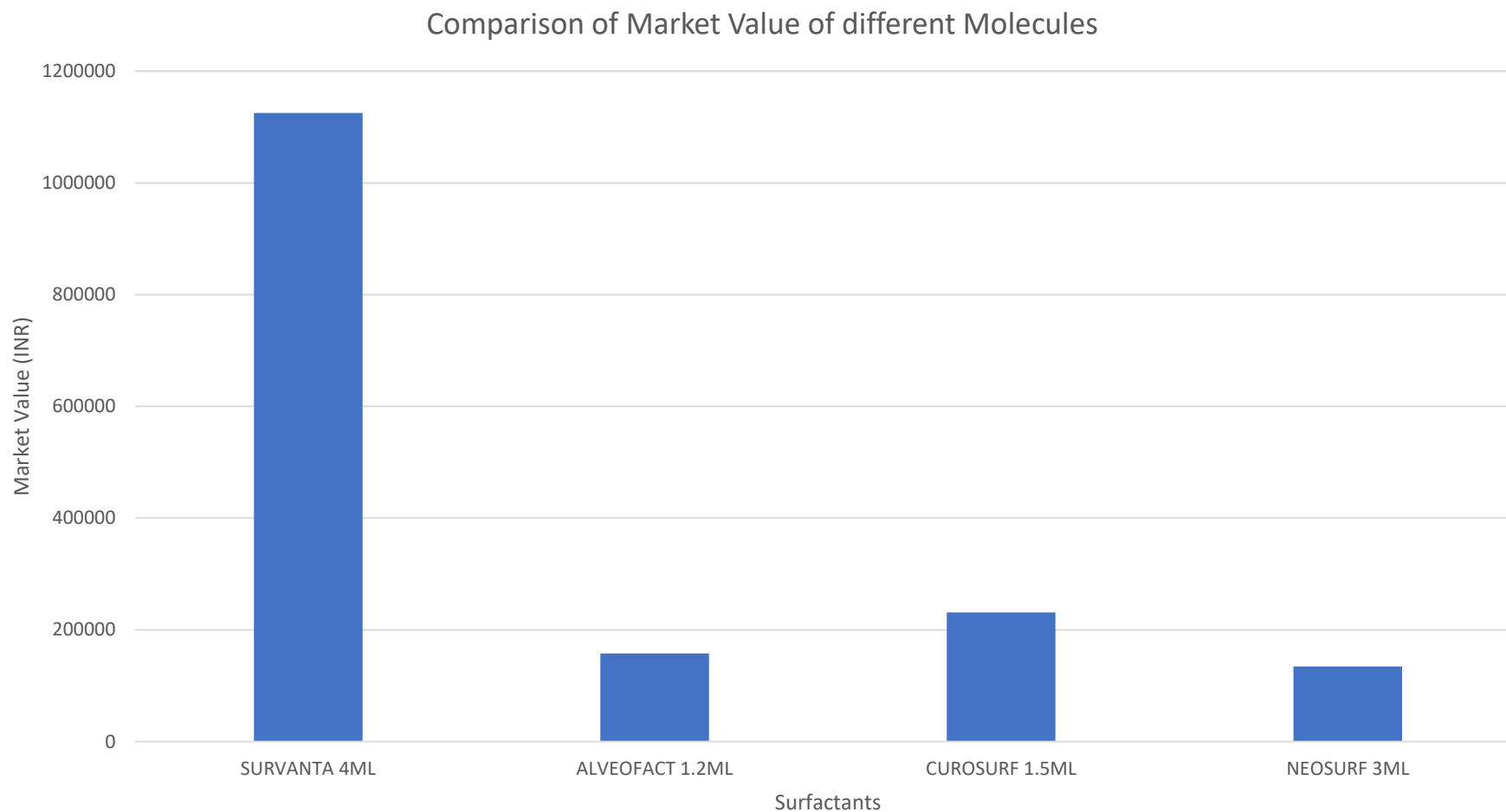
Table 1. Market Volume and Market Value of Surfactants

Comparison of Market Volume of different Surfactant:



The primary research revealed the most prescribe Surfactant in NRDS was Survanta followed by Alveofact, Curosurf, Neosurf. Figure1

Comparison of Market Volume of different Surfactant:



Survanta appeared to occupy major value share followed by Curosurf, Alveofact and Neosurf. Figure2.

Distribution of Different dosage Strenths of Surfactants:

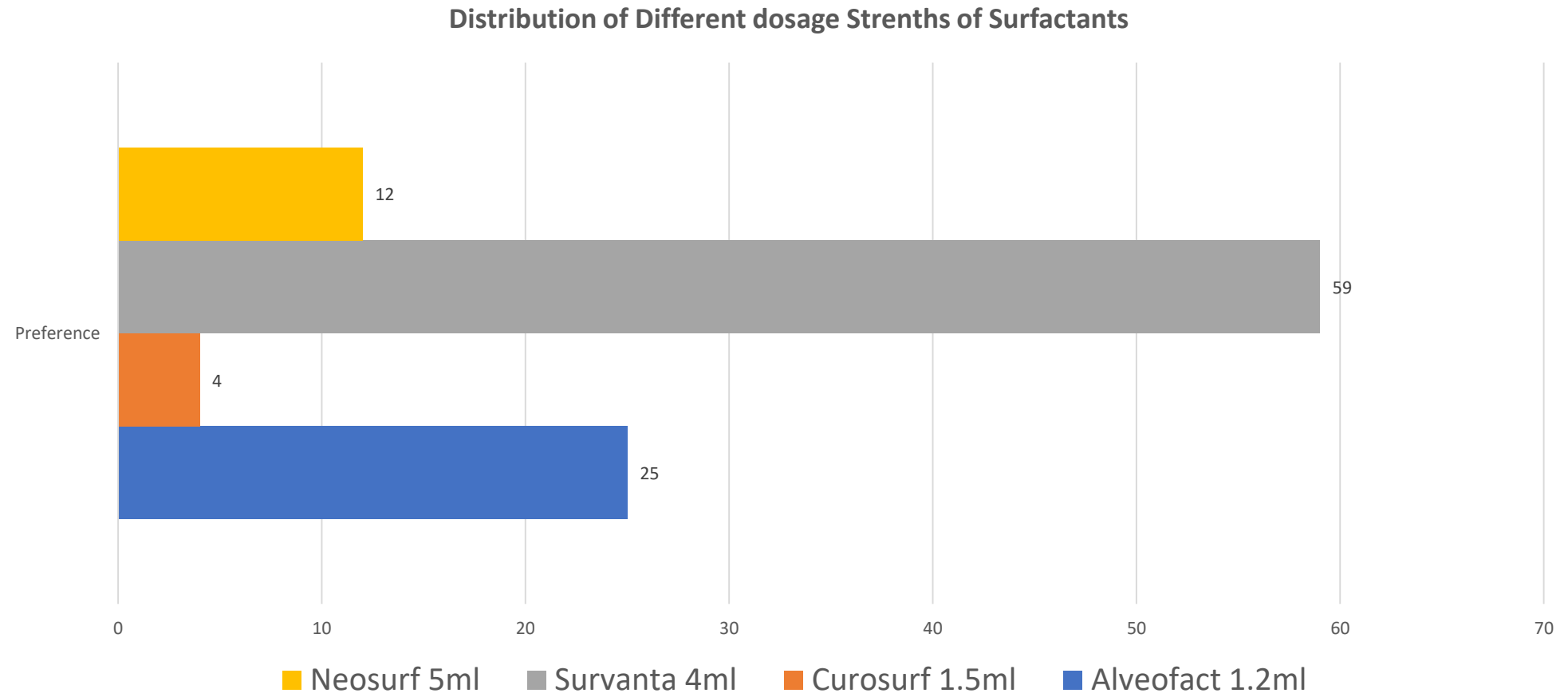


Figure 3 shows the prescription share occupied by different dose strengths within individual Surfactant. The highly prescribed strengths for individual molecules is 4 ml Surfactant, 1.2ml Alveofact, 5 ml Neosurf, 1.5 ml Curosurf.

Surfactant Market Overview with top selling Brands:

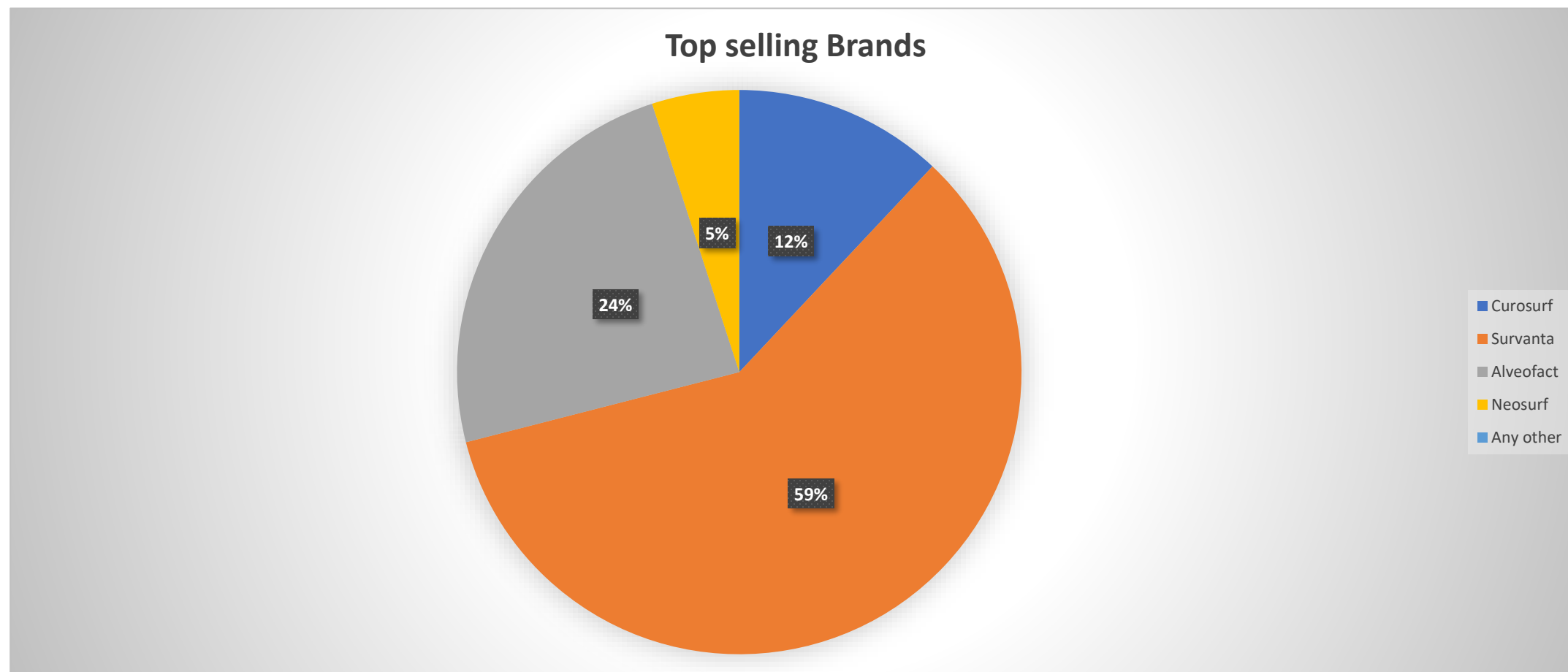
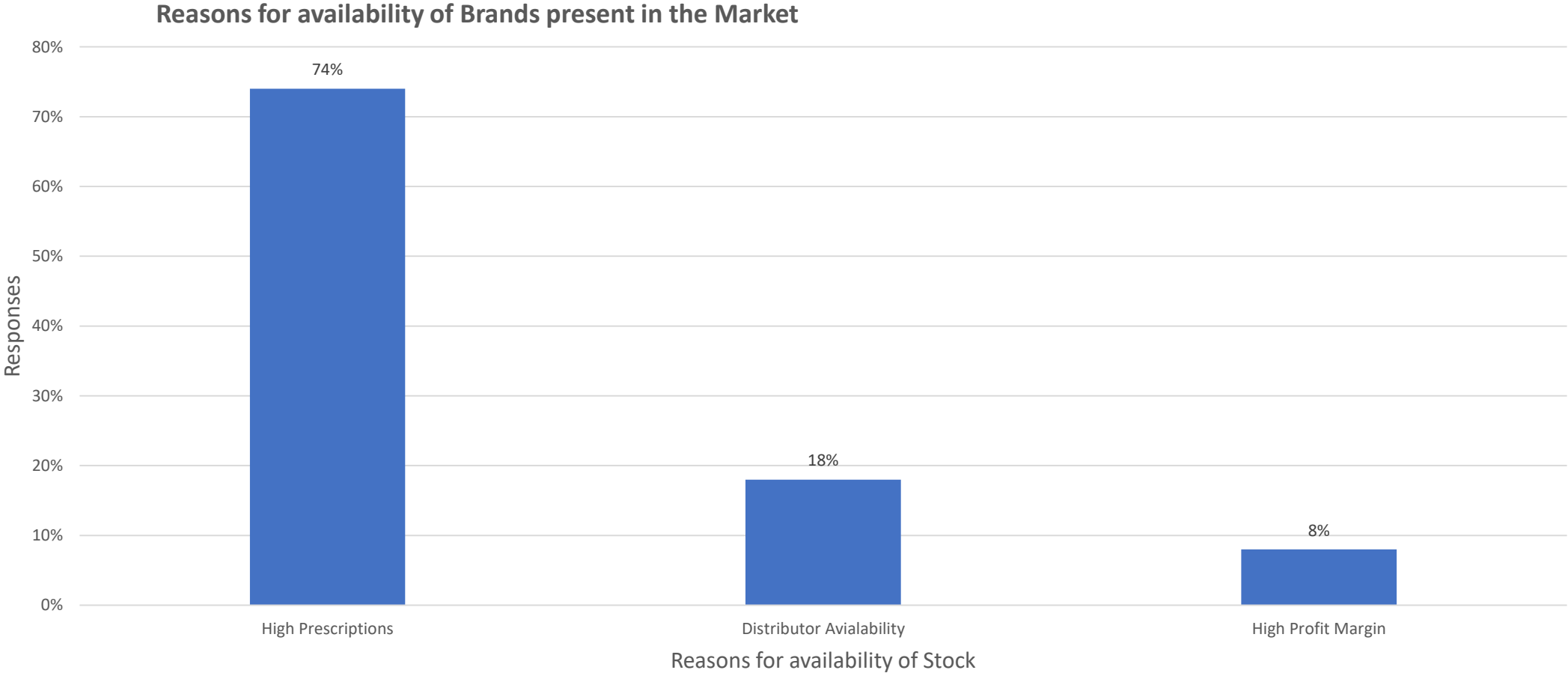


Figure 3 depicts that the top 2 brands of Surfactants occupy about 24% and 59% share of the respective Market. The competition among brands for other molecules was quite defined with limited brands occupying a significant market share.

Reasons for availability of Brands present in the Market:



Reasons for availability of Brands present in the Market:

Figure 4. Reasons for availability of Brands present in the Market
About 74% of the respondents said that High prescription inflow was the main reason for them to keep availability of the major brands, and nearly 18% respondents said that the availability of the distributors was the reason to make these brands available at their stores, while only 8% participants agreed that they kept these brands at their stores due to high profit margins they provided.

Surfactants Market Landscape:

Surfactants Market Landscape			
Surfactants	Natural Surfactant	Modified natural surfactants	Synthetic Surfactant
Average monthly Sales (Qty)	162	423	0
	27.69 %	72.31 %	0.00 %
Highly prescribed Brands	Alveofact	Survanta	Surfaxin
	Neosurf		
	Curosuf		

Table 2. Market Landscape

Discussion:

- The market estimation of Surfactants in the city was evaluated to be Rs. 16,47,900 at market volume of 26,200. The Surfactant advertise was found to involve 27.69 % normal surfactant and 72.31 % altered common surfactants. The Natural Surfactant advertise was separated into Alveofact, Neosurf and Curosurf.
- High medicine inflow and value factor (after DPCO) was a main factor in accessibility of explicit Brands in the market.
- As indicated by the essential members, This might be a direct result of high challenge among items and intercession of Regulatory bodies about the valuing strategy (DPCO).

Conclusion & Recommendation

- The intraventricular hemorrhage, pneumothorax and rate of bronchopulmonary dysplasia were similar among patients treated with Alveofact, Curosurf and Survanta. The doctors preferred brand for the treatment of neonatal respiratory distress in preterm baby is Survanta because of high margin on Survanta in hospital pharmacy and well-established medicine brand for the treatment of NRDS patients.
- The adjusted common surfactants possess about 72% of Surfactant showcase in the city however their market has been radically affected by consistently diminishing costs after the mediation of DPCO.
- Survanta is profoundly recommended, however its market is additionally affected by the characteristic surfactant. For New participants, the market gives off an impression of being very testing because of set up client faithfulness by Older brands.
- The Market infiltration techniques could be connected so as to expand Market share. Deals power assumes a noteworthy job in the solution age in such aggressive markets.

References

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 Thank you