

Market Assessment of Natural surfactant (ALVEOFACT) in Agra, Ghaziabad and Noida



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Definitions in neonatal medicine

- A mature newborn: the end of the 37th and the end of the 42nd week of pregnancy.
- A premature infant: before the completed 37th week of pregnancy.
- Underweight newborns: Birth weight < 2.500 g (LBW: low birth weight infant)
- Very underweight newborns: Birth weight < 1.500 g (VLBW: very low birth weight infant)
- Extremely underweight newborns: Birth weight < 1.000 g (ELBW: extremely low birth weight infant)

What is NRDS?

- ▶ Neonatal respiratory distress syndrome .It is a condition of increasing respiratory distress.
- ▶ Sign and symptoms: they include ,rapid , shallow breathing.
- ▶ It is due to insufficiency of pulmonary surfactant and is mainly confined to preterm infants.

What is pulmonary surfactant?

- ▶ It is available in the lungs.
- ▶ It consists of lipid and proteins that is synthesized and stored in type 2 alveolar epithelial cells.
- ▶ It decreases the surface tension within the alveoli.

What is Alveofact?

- ▶ Bovine lipid extract surfactant.
- ▶ Completely natural .
- ▶ Obtained by lungs lavage.
- ▶ Composition:-
- ▶ 50 mg Phospholipids
- ▶ 1 ready to use prefilled syringe 1.2 ml solvent for reconstitution.
- ▶ 1 Canulla.
- ▶ 1 vial-adaptor.

DOSAGE

- ▶ Dose : Initial dose-50mg/kg
- ▶ Repeat dose:3 subsequent dose of 50mg/kg based on ventilator requirement.
- ▶ The total dose should not exceed 4 doses of 1.2ml alveofact per kg(200mg)within the first 5 days of life.

Features of Alveofact

- ▶ Completely natural bovine lung lavage.
- ▶ Dose 50 mg/kg
- ▶ Vial wastage is nill.
- ▶ Phospholipid contents is 90%.
- ▶ Viscosity:8 times lesser than all.
- ▶ SP-B protein concentration is highest i.e 5.2.
- ▶ Stability is 36 months.
- ▶ Loss of activity due to plasma protein is very low.

Benefits of Alveofact

- ▶ Low viscosity: lowers the surface tension & increases the response of the alveoli.
- ▶ Purity due to lavage: better clinical efficacy due to more amount of surfactant protein B.
- ▶ Shelf life of 3 years : better stability.
- ▶ High clinical efficiency.
- ▶ No warming required.

Research Problem:

- ▶ Respiratory Distress Syndrome (RDS) is observed in premature infants (<37weeks). Insufficient surfactant leads to reduced pulmonary compliance and increased surface tension. It is due, to insufficiency of pulmonary surfactant and is mainly confined to preterm infants. Poor Oxygen supply to the body due to damage of Lungs (Alveoli)
- ▶ Which result to increase the Mortality rate, Infections and Permanent Neurodevelopment Handicap. So, with the help of this study we can find out the market potential of Natural surfactant in U.P.

Literature Review

Comparison of three treatment regimens of natural surfactant preparations in neonatal respiratory distress syndrome

- The aim of the study was to compare the treatment regimen of three natural surfactants of different extraction and formulation (Alveofact [Surfactant A = SA], Poractant [Surfactant B = SB] and Beractant [Surfactant C = SC]) in neonatal respiratory distress syndrome (RDS). Premature infants of ≤ 32 weeks' gestation with birth weight of $\leq 2,000$ g and with established RDS requiring artificial ventilation with a $FiO_2 \geq 0.3$ were randomly assigned to receive at least two doses of SA, SB or SC (100 mg/kg per dose). Infants who remained dependent on artificial ventilation with a $FiO_2 \geq 0.3$ received up to two additional doses. There were no differences among the groups regarding the necessity for more than two doses. The SA and the SB groups spent fewer days on a ventilator (p-value SA/SB 0.7, SA/SC 0.05, SB/SC 0.043) compared with the SC group, needed fewer days of oxygen administration (p-value SA/SB 0.14, SA/SC 0.05, SB/SC 0.04) and spent fewer days in hospital (p-value SA/SB 0.65, SA/SC 0.04, SB/SC 0.027). There were no statistically significant differences in the incidence of mortality, chronic lung disease, air leaks, necrotising enterocolitis, retinopathy of prematurity and intraventricular haemorrhage among the three groups. Conclusion: The Alveofact and Poractant groups spent fewer days on the ventilator, needed fewer days of oxygen administration and spent fewer days in hospital compared with the Beractant group but no differences were observed among the three groups with regards to mortality and morbidity.

Objectives:

- ▶ To find out most selling Natural surfactant brands in selected Cities, of Uttar Pradesh.
- ▶ To know the competitive scenario of Alveofact in selected Cities,of Uttar Pradesh.
- ▶ To know the Doctors attitude towards Natural Surfactant in selected cities, of Uttar Pradesh.

Research Methodology:

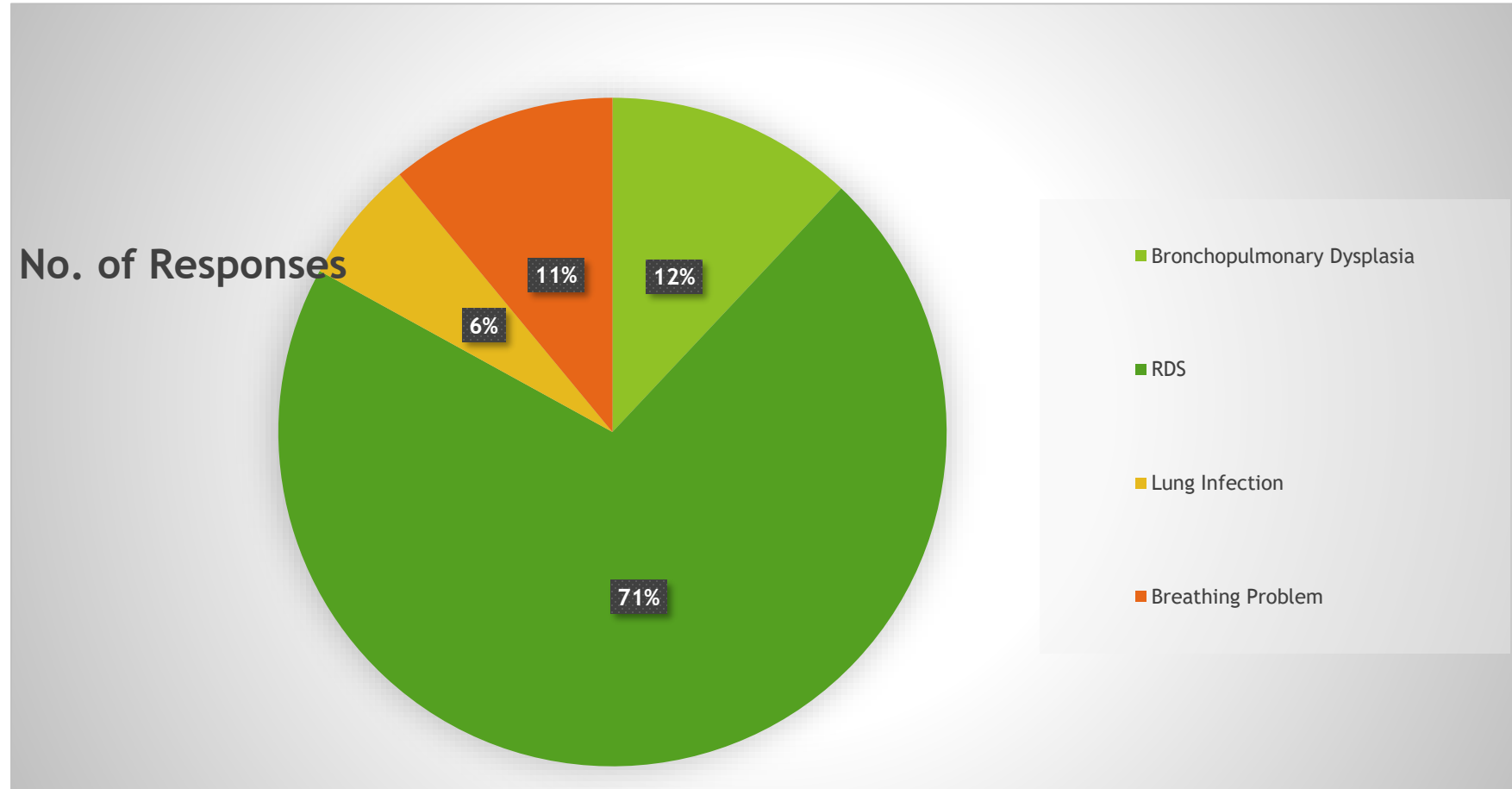
- ▶ Study Design: Descriptive Study.
- ▶ Sampling: Non-Probability (convenience Sampling).
- ▶ Target Respondent: From various Govt. & Private hospitals, Neonatologists and Paediatrician's.
- ▶ Sample area: Ahmedabad, Surat, Gandhinagar, Baroda in (Gujarat)
- ▶ Tools Used for Data Collection: Direct Questionnaire method.
- ▶ Type of Questionnaire: Semi-Structured.
- ▶ Type of Questions: closed and open ended.

Research Plan:

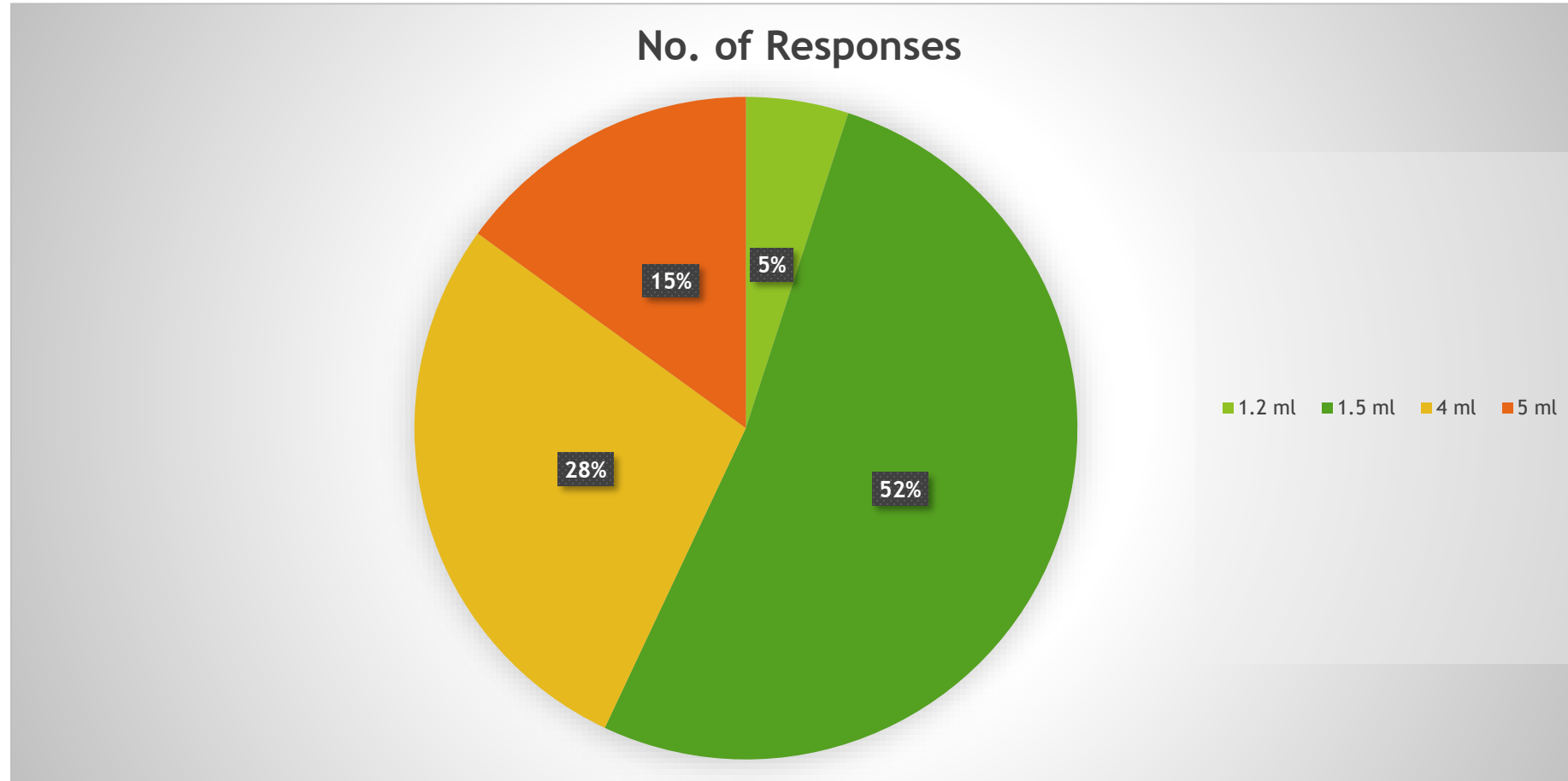
- ▶ Data Source: - Primary data (Through Questionnaires and meeting with respondents and Secondary data (Through Company website, various research articles and publications). Data was triangulated using both Primary and Secondary approach.
- ▶ Sample size:
- ▶ No. of Doctors:100.
- ▶ No of Chemists:100.
- ▶ Duration of Study: - 3 months.
- ▶ Data Analysis Techniques: - The findings and the information's collected and compiled, analysed on Microsoft Excel.

Data Processing, Analysis and Interpretation:

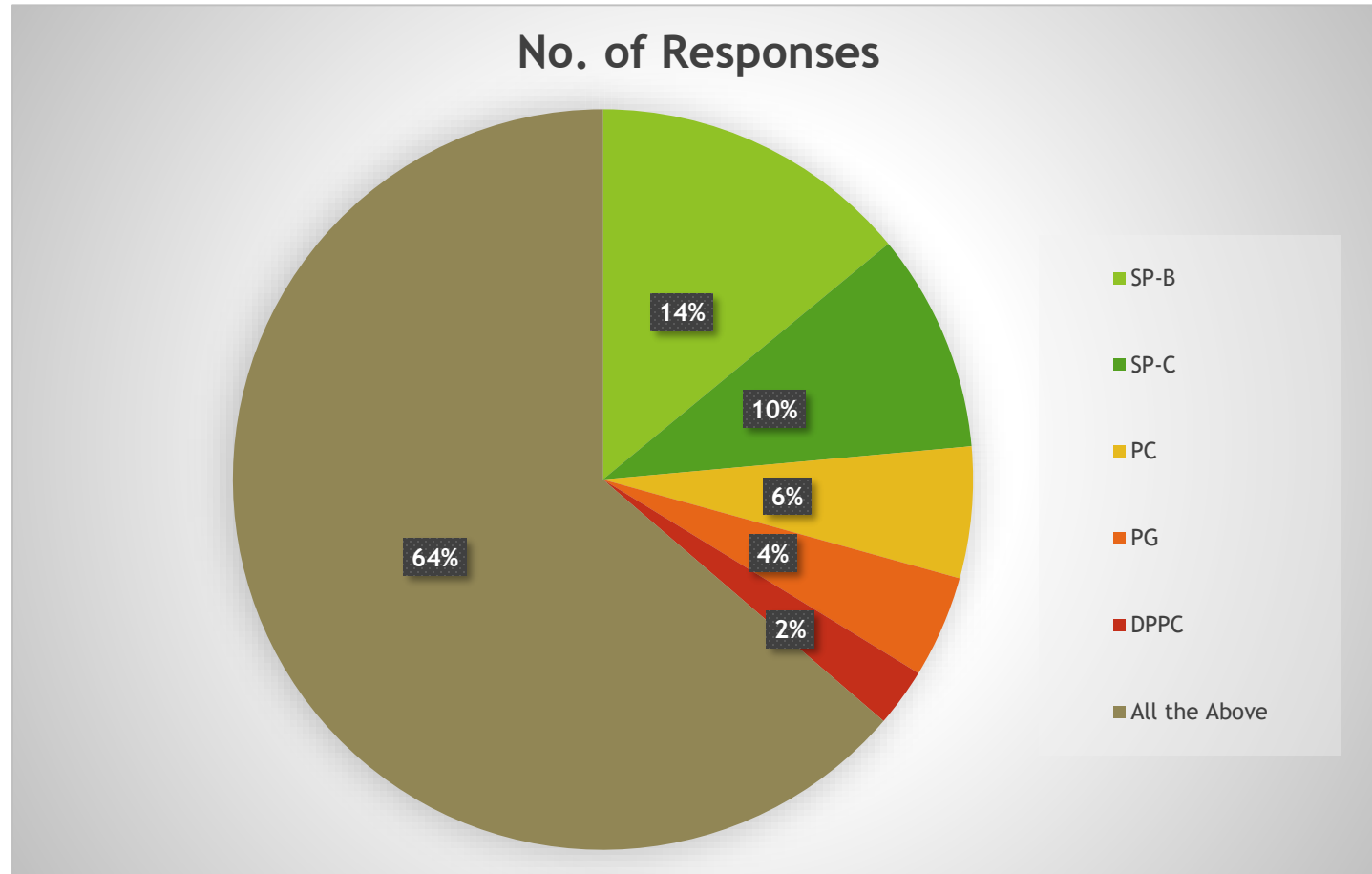
Q1. Doctor in which indication do you preferred Natural surfactant?



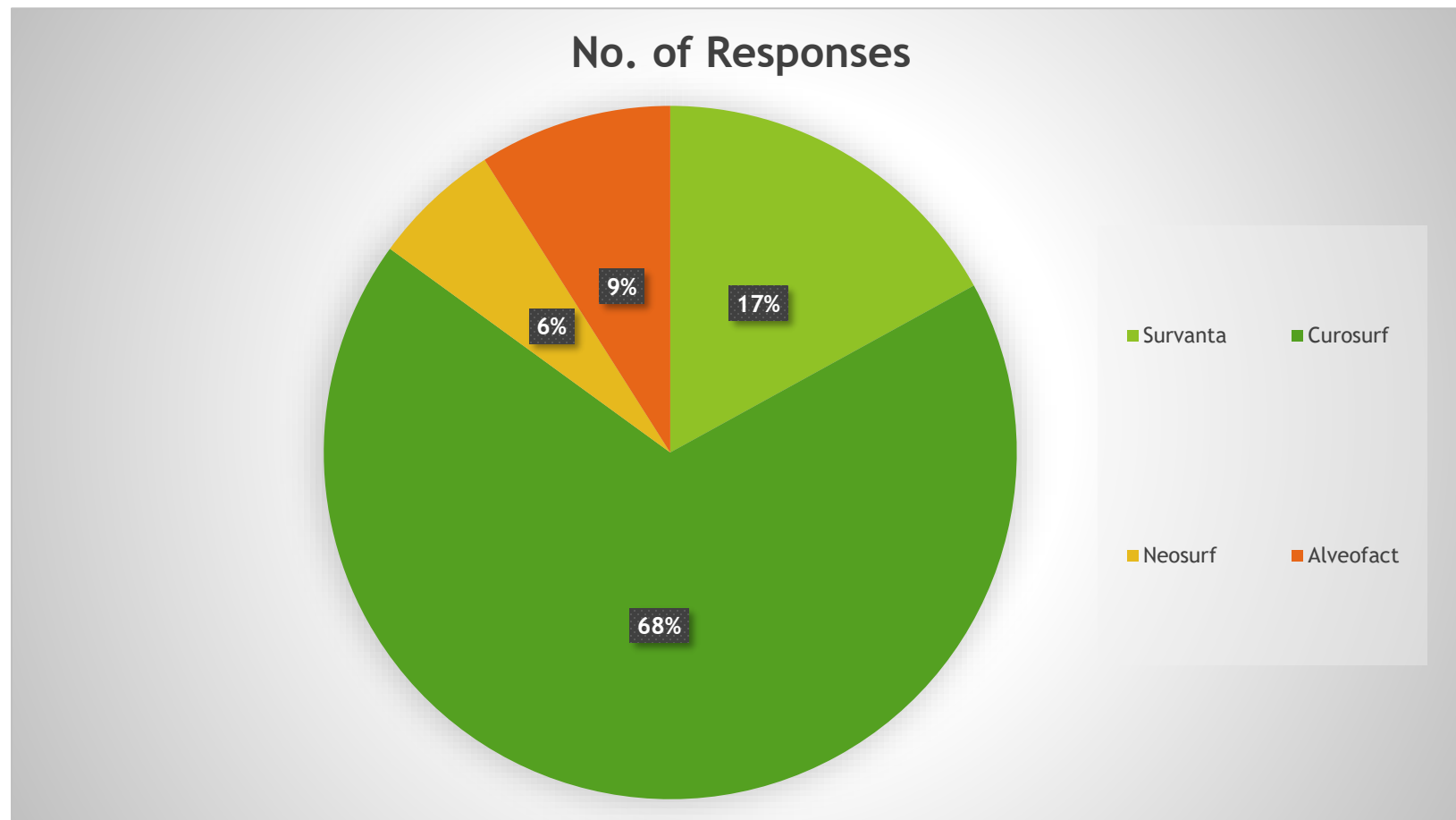
Q2. Doctor what is the preferred dosage for 1kg baby in RDS case?



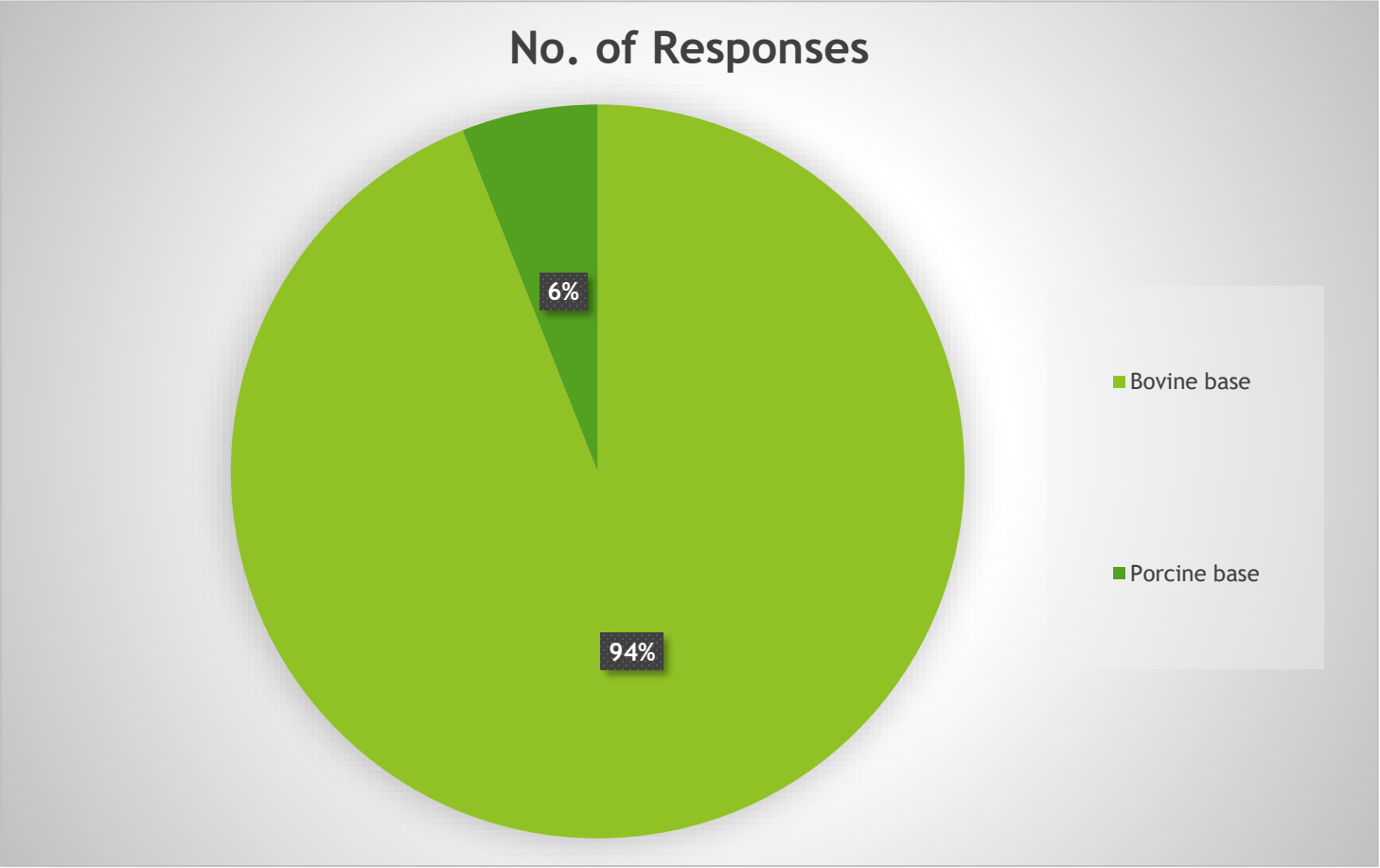
Q3. Doctor according to you, what are the attributes of ideal Natural surfactant?



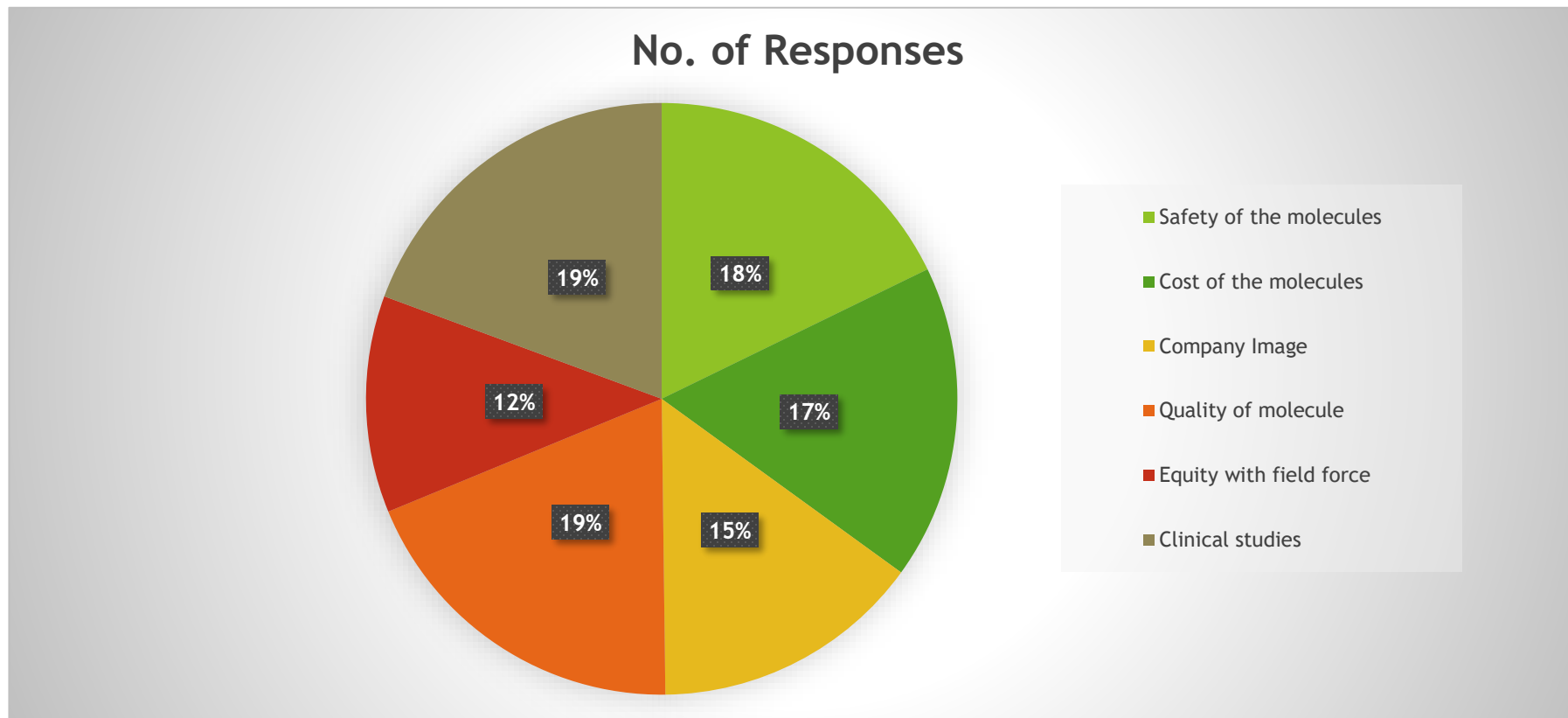
Q4. Which brands do you use the most in the treatment of RDS or breathing problem associated with other indications.?



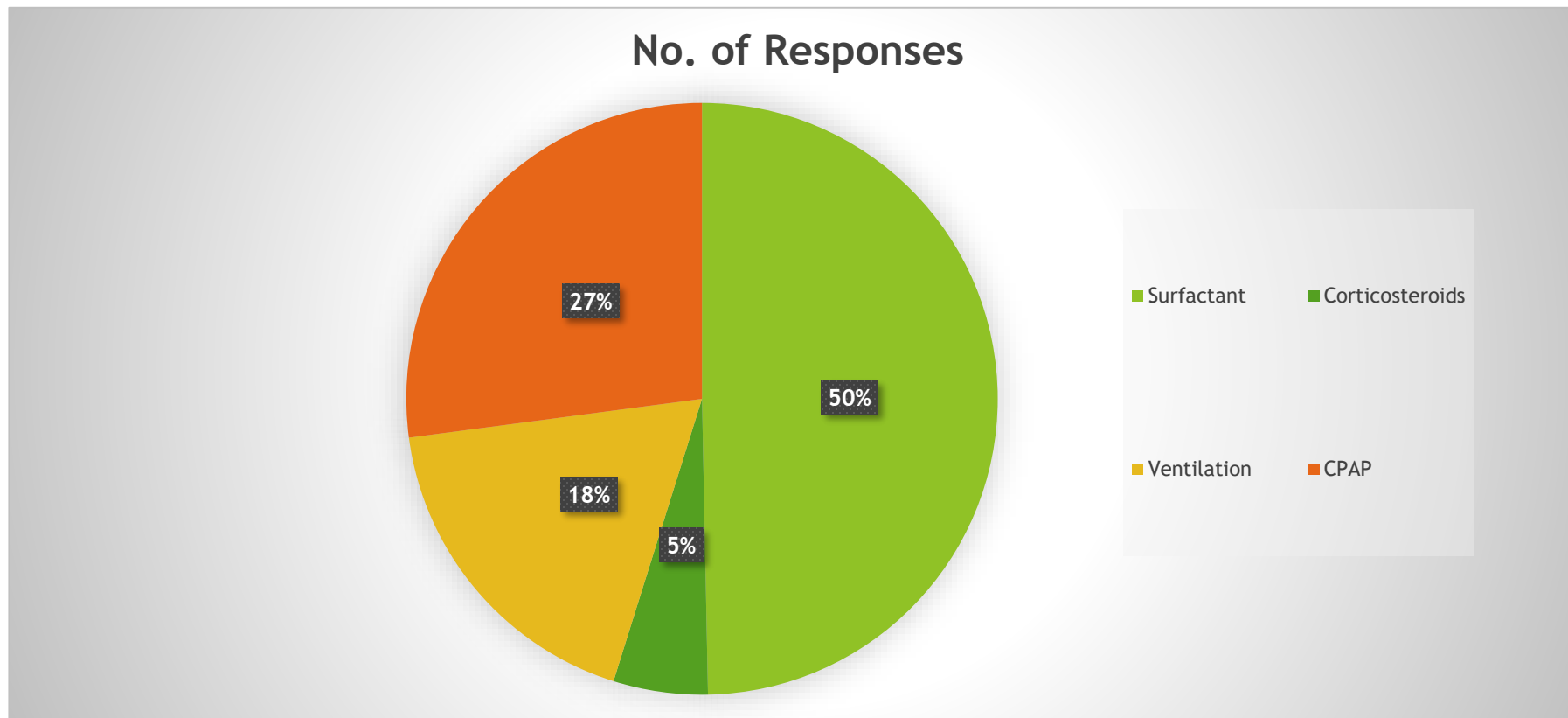
Q5. Doctor do you think bovine based Natural surfactant is an effective than porcine based?



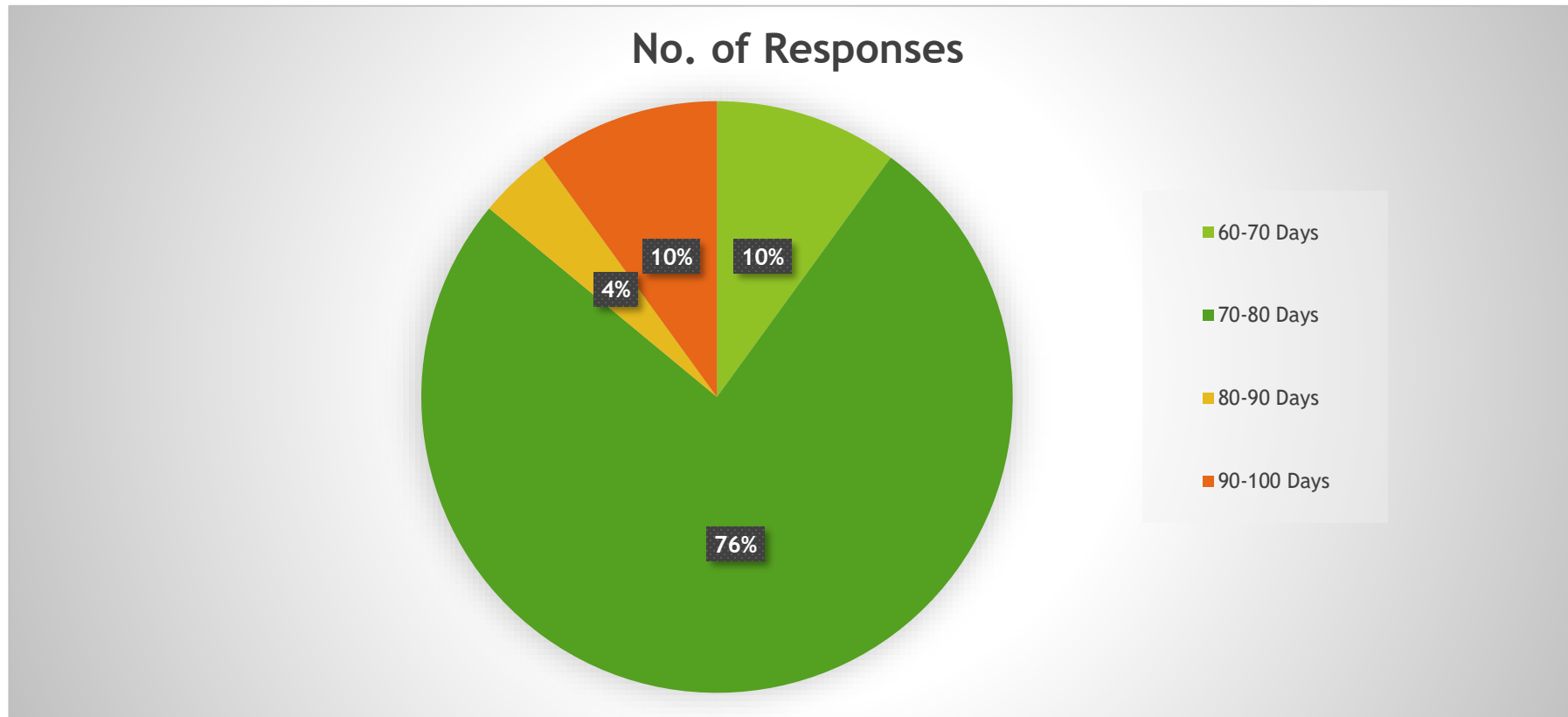
Q7. Doctor which of the following attributes influences your Rx?



Q9. How do you treat RDS Patients mostly?

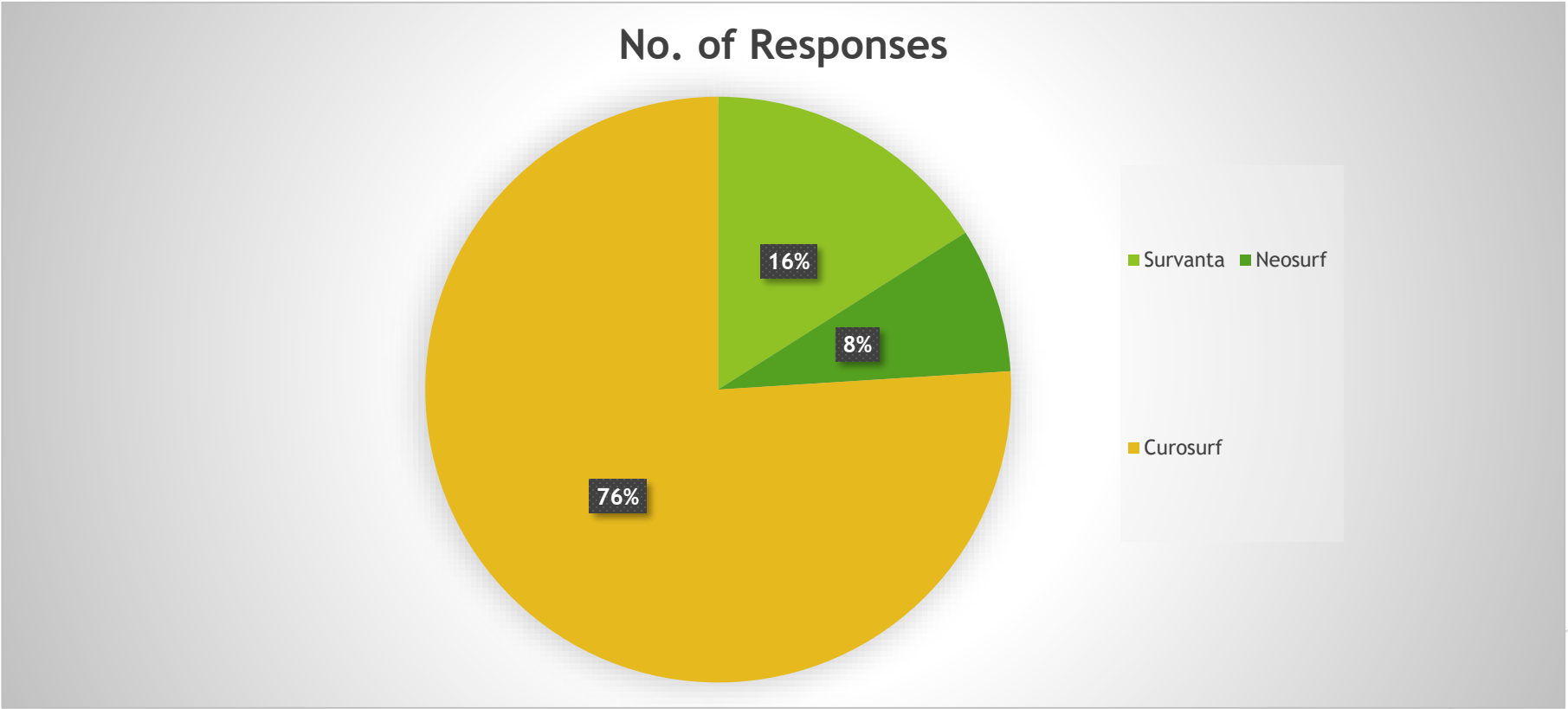


Q12. How long do you use surfactant to your RDS patient's?

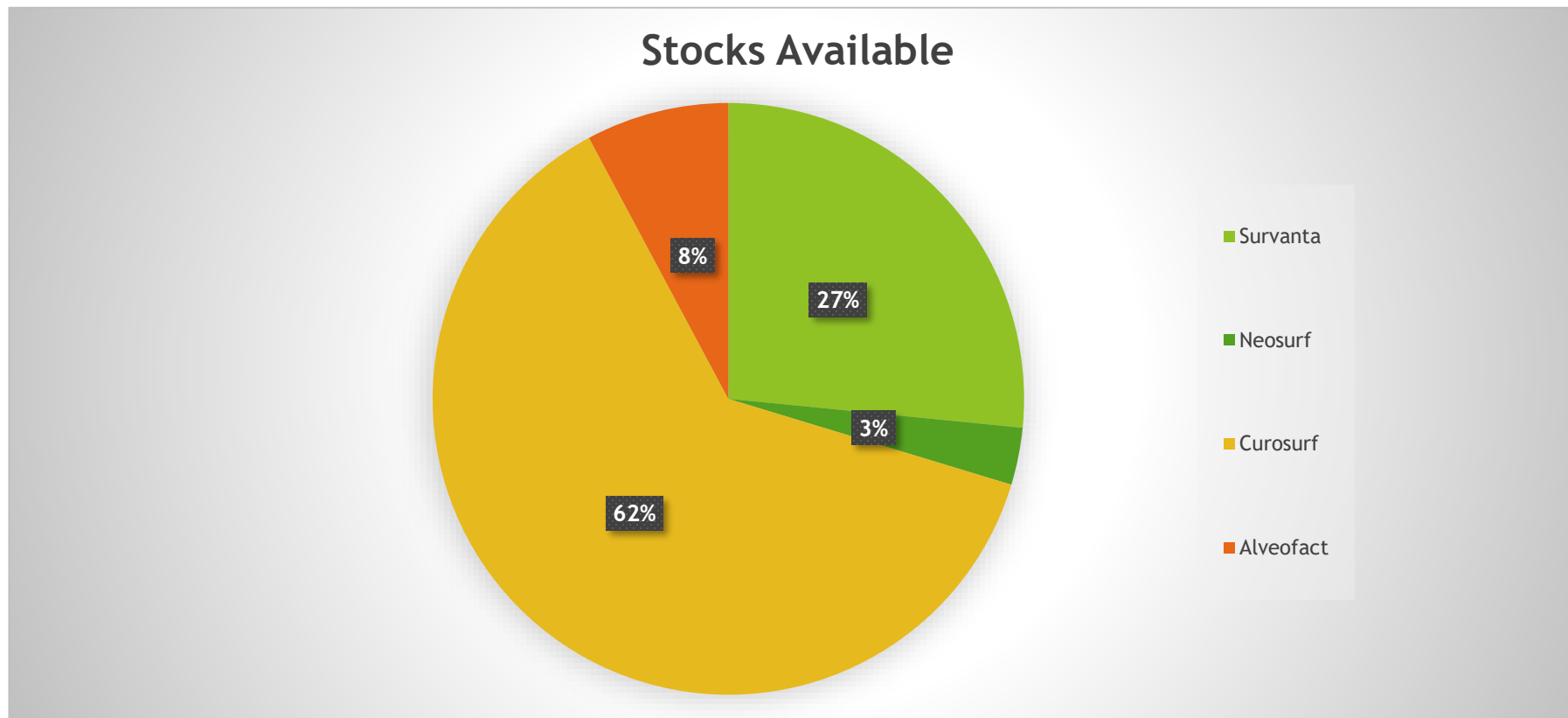


RETAIL CHEMIST PRESCRIPTION AUDIT

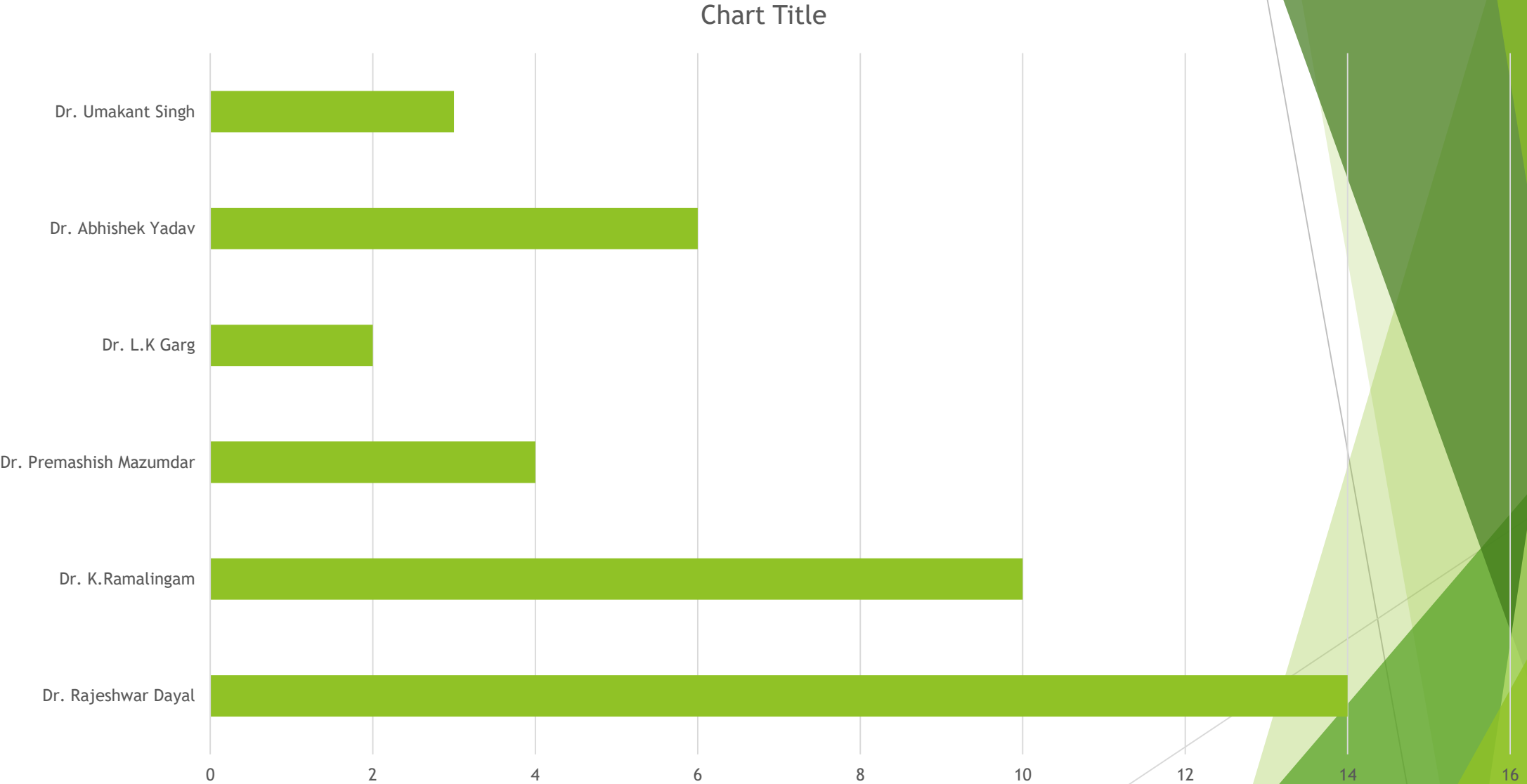
Q1. Which are the 3 major brands of surfactant selling most on your counter?



Q3. How much stocks do you have now?



Q4. Who are the top prescribers of Natural Surfactant brands and how much doctors prescribes?



Parameter	Alveofact	Survanta	Curosurf	Neosurf
Origin	Bovine Lungs	Bovine Lungs	Porcine Lungs	Bovine Lungs
Method	Lavage	Minced	Minced	Lavage
Dose per Kg	50 mg	100 mg	200 mg	135 mg
Volume per Kg	1.2 ml	4 ml	1.5 ml	5 ml
Active phospholipid conc. per ml	45 mg	25 mg	80 mg	27 mg
Warming required	Not required	Yes	Yes	Yes

Storage temperature	Stable upto 30°C	2-8°C	2-8°C	2-8°C
Phospholipid %	90%	84%	99%	DPPC (40%)
Viscosity	8 times less viscous	High	High	8 times less viscous
SP B protein concentration	SP B: 5.2 SP C: 12.9	SP B: 1.3 SP C: 16.5	SP B: 3.2 SP C: 10.1	Not defined
Stability	36 months	15 months	15 months	36 months
Loss of activity through plasma proteins	Low	High	High	Low
Infants requiring one dose only	78.10%	51%	73%	
Price	7,030	13,178	12,280	8,897

Conclusions

- ▶ It was found out that most selling Natural surfactant brands is Curosurf in Agra.
- ▶ It was found out that Dose per Kg required of Natural Surfactant i.e. 45mg Alveofact, 100mg Survanta, 200mg Curosurf, and 135mg Neosurf.
- ▶ The cost and dose are the two main factors that influence the prescription of Natural Surfactant.
- ▶ The Target consumer: Marketing efforts are more likely to be successful if they are aimed at consumers, rather than at the public at large.

- ▶ Almost all the Neonatologist & Pediatricians preferred Natural surfactant for the treatment of NRDS. Natural surfactant has shown to have a better prognosis than synthetic surfactants.
- ▶ There is another reason of doctors to preferred Survanta is pre-filled suspension vial. Survanta is available in suspension form and no need to make suspension as in Alveofact is available in lyophilized form and before injecting in to the baby we have make it into Solution form.

Recommendations

- ▶ Identify the Key Opinion Leader and served with more frequently with excellent customer service.
- ▶ By preparing the promotional strategies helps in Improving the sales of the product.
- ▶ Regular visit along with time to time activity influence the doctor to prescribe the brand.
- ▶ Marketing Managers identifies target consumers and discovers their desires in order to design an effective marketing mix.
- ▶ Determining Consumer Desires: Effective marketing strategy requires a knowledge of consumer desires; the benefits that consumers seek.

- ▶ Medical Representatives should be trained well by the organisations regarding the use of iPads/Tablets and pharmaceutical organisations should have a dedicated tech support team to resolve issues in call reporting or any other software or hardware issues faced by the sales force in day to day activities.
- ▶ There is need of Conducting conferences, CMEs, & RTMs with the help of this activities Neonatologist KOL and Pediatricians in that conference, we can address the other doctors regarding the Natural surfactant compositions, attributes of ideal Natural surfactant, dosage form and regarding surfactant compositions in treatment of NRDS.
- ▶ Reminder Cards, Stickers and Gifts like Diaries, pen, or calendar can be given to doctors and hospital pharmacist for prolong relationship with the company and as well as for brand recognitions.”

Thank you