

Market Assessment of Natural surfactant (ALVEOFACT) in Ahmedabad, Surat, Gandhinagar, Baroda in (Gujarat)”



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Definitions in neonatal medicine

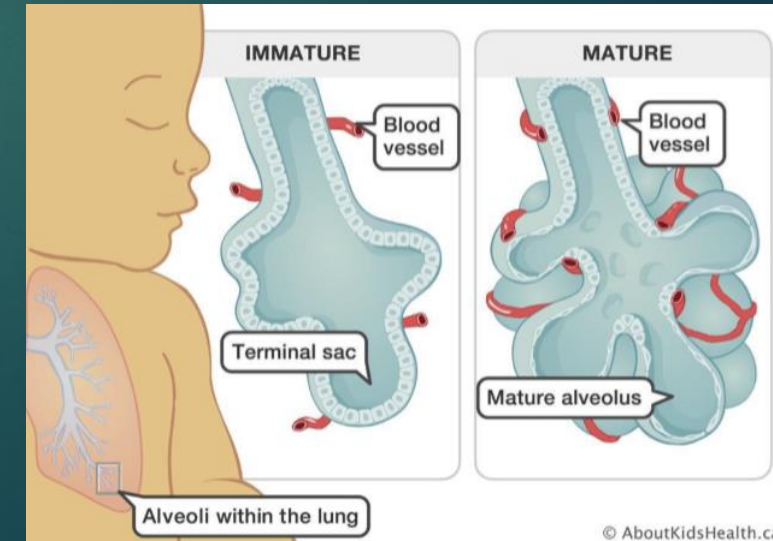
- A MATURE NEWBORN: THE END OF THE 37TH AND THE END OF THE 42ND WEEK OF PREGNANCY.
- A PREMATURE INFANT: BEFORE THE COMPLETED 37TH WEEK OF PREGNANCY.
- UNDERWEIGHT NEWBORNS: BIRTH WEIGHT < 2.500 G (LBW: LOW BIRTH WEIGHT INFANT)
- VERY UNDERWEIGHT NEWBORNS: BIRTH WEIGHT < 1.500 G (VLBW: VERY LOW BIRTH 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). Surfactants production is insufficient due to the immature development of type II Pneumocytes, which begin to be produced Surfactant at approximately 22-23 weeks gestation. 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 selected cities of Gujarat.

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 $\text{FiO}_2 \geq 0.3$ 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 $\text{FiO}_2 \geq 0.3$ 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, Gujarat.
- ▶ To know the competitive scenario of Alveofact in selected Cities, Gujarat.
- ▶ To know the Doctors attitude towards Natural Surfactant in selected cities, Gujarat.

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:

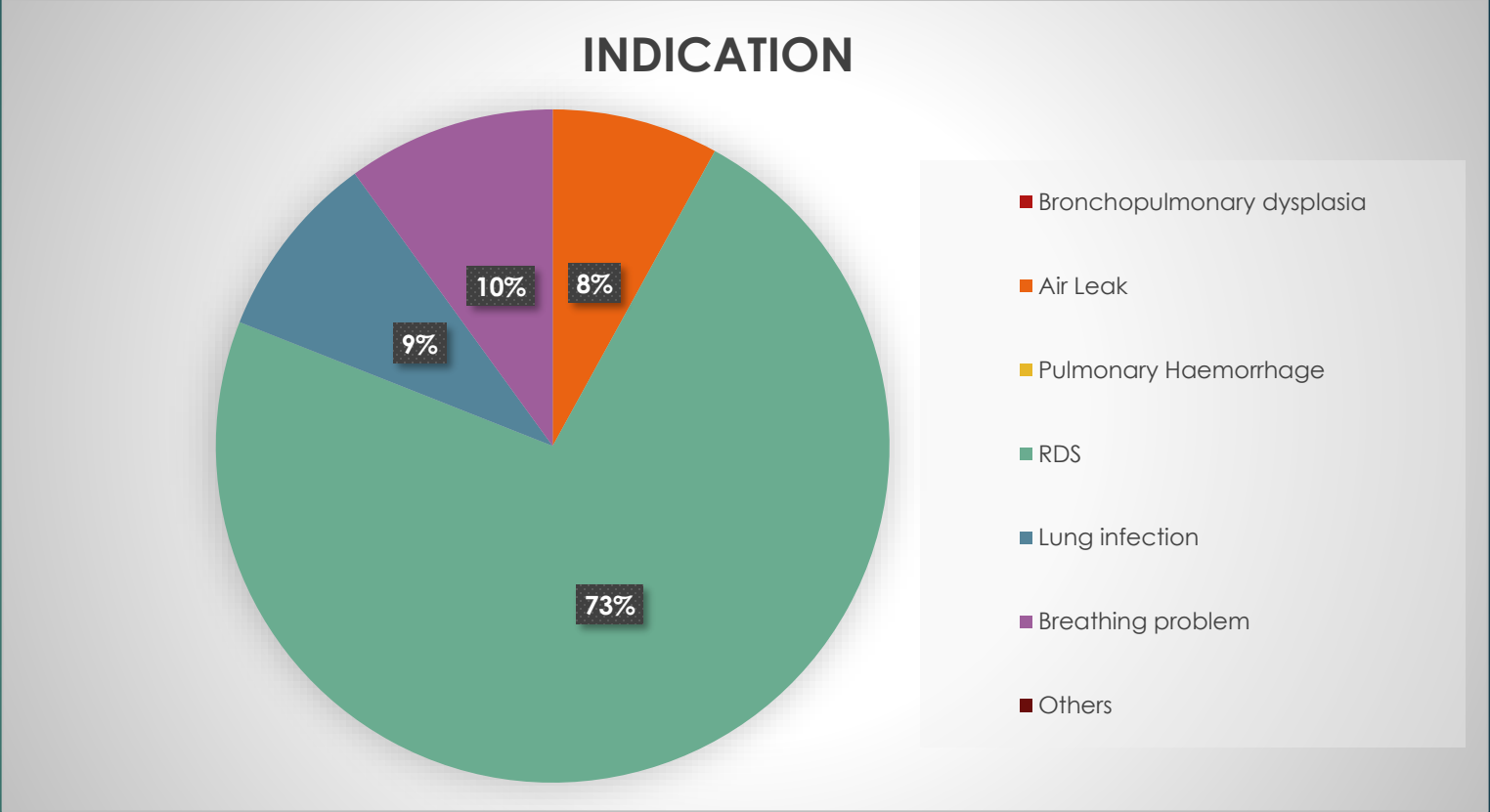
- ▶ Data Source: - Primary data (Through Questionnaires and meeting with respondents and Secondary data (Through Company website, various research articles and publications). Data was triangulated using both Primary and Secondary approach.
- ▶ Sample size:
- ▶ No. of Doctors:100.
- ▶ No of Chemists:100.
- ▶ 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?

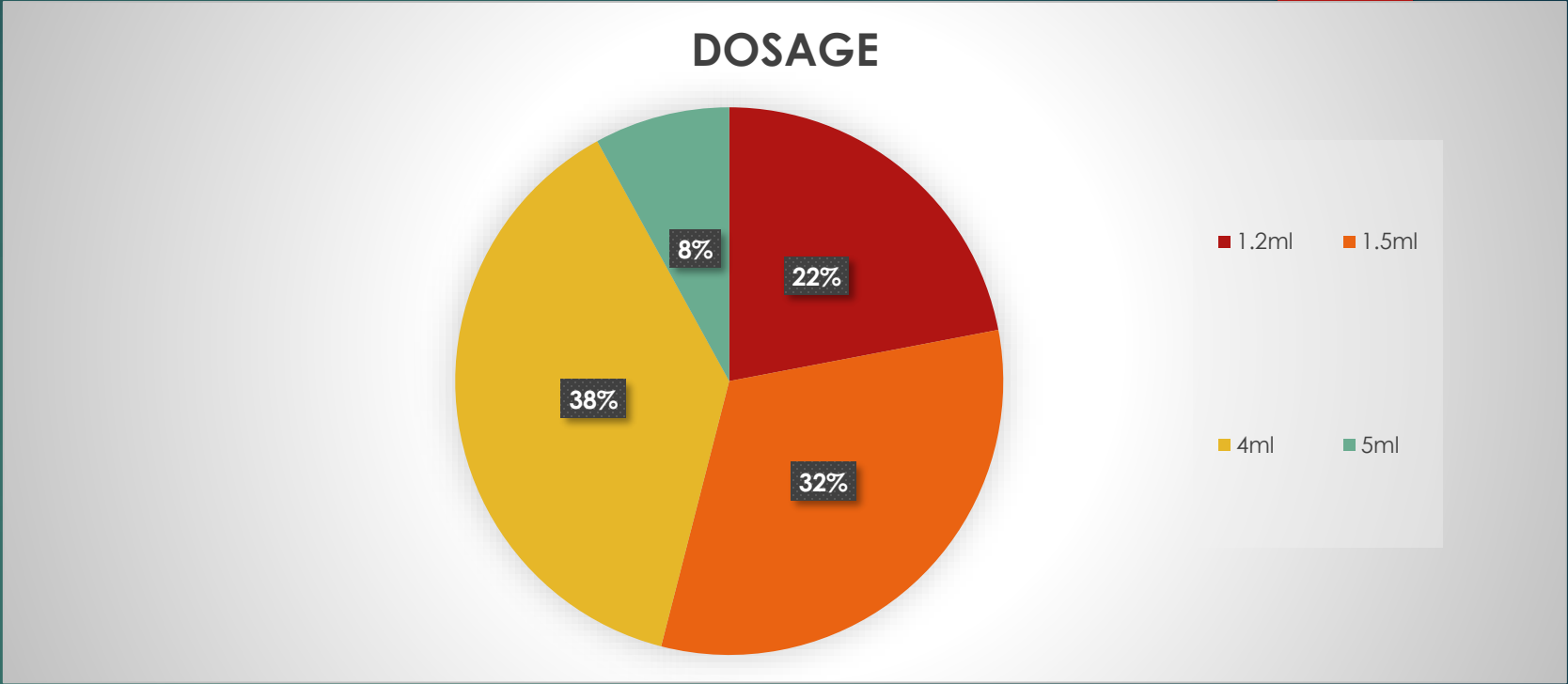
INDICATIONS	NO. OF RESPO NSES
Air leak	8
Bronchopulmonar y dysplasia	
Pulmonary Haemorrhage	
RDS	73
Lung infection	9
Breathing problem	10
Others	



INTERPRETATION
73 % of the doctors prescribe surfactant to treat the RDS
10 % of the doctors prescribe surfactant to treat the Breathing problem
9 % of the doctors prescribe surfactant to treat the lung infection
8 % of the doctors prescribe surfactant to treat the air leak

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

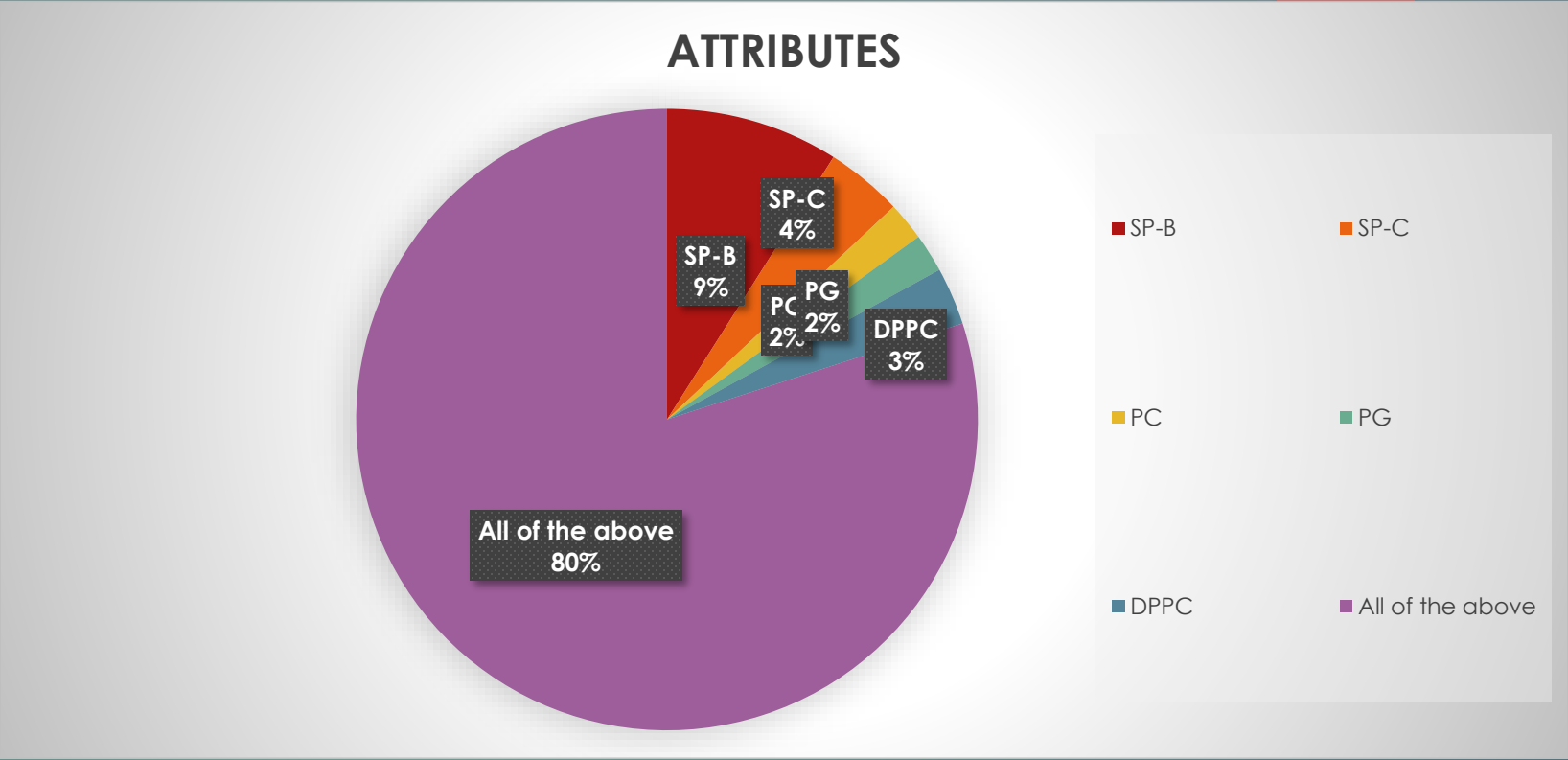
DOSAGE	NO. OF RESPONSES
1.2ml	22
1.5ml	32
4ml	38
5ml	8



INTERPRETATION
38 % of the doctors prefer 4ml per kg of dose for the treatment of RDS
32 % of the doctors prefer 1.5ml per kg of dose for the treatment of RDS
8 % of the doctors prefer 5ml per kg of dose for the treatment of RDS
22 % of the doctors prefer 1.2ml per kg of dose for the treatment of the RDS

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

Ideal Attributes	No. of Responses
SP-B	9
SP-C	4
PC	2
PG	2
DPPC	3
All the above	80



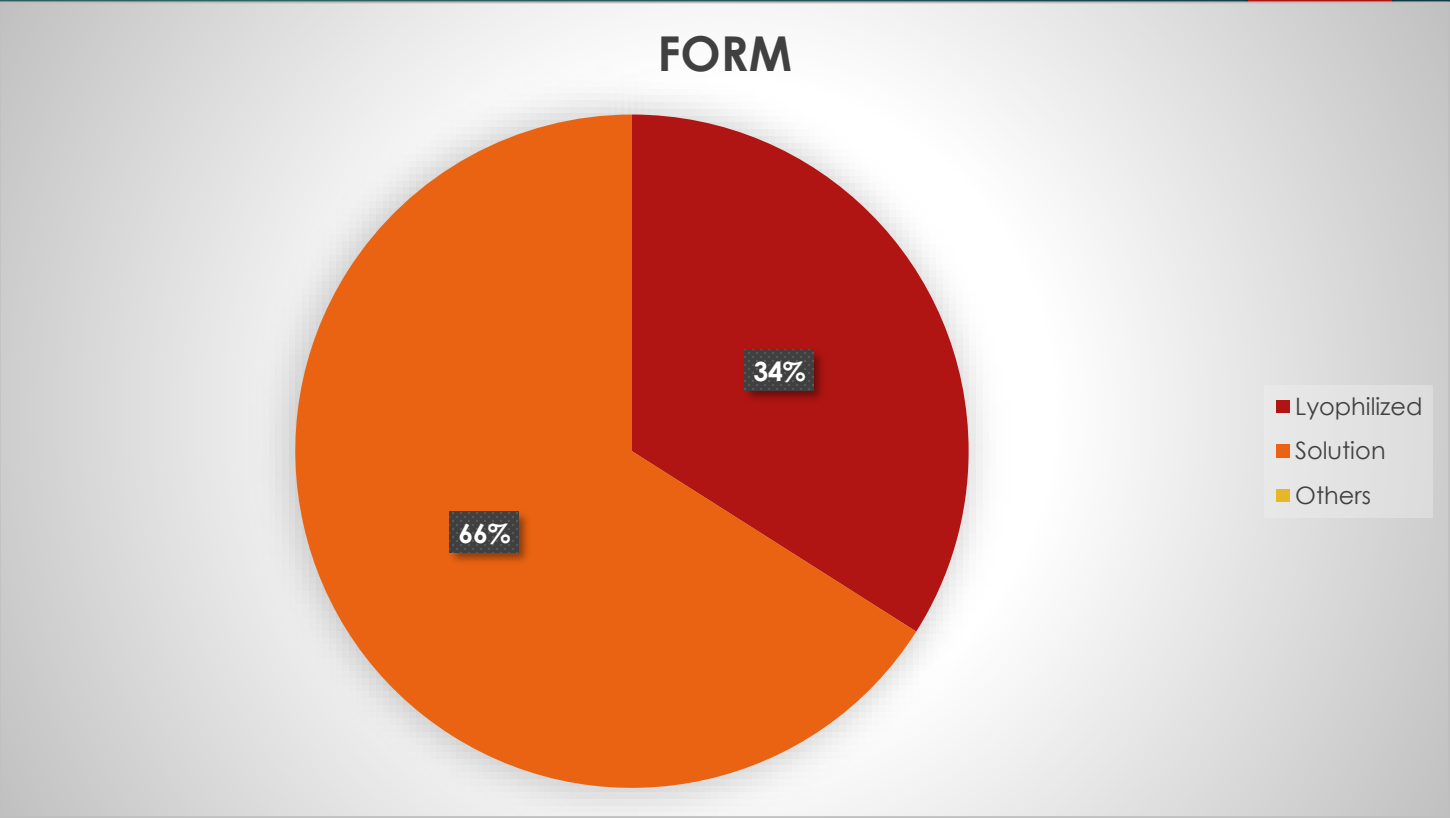
INTERPRETATION

80 % of the doctors preferred all the attributes of the natural surfactant, which is mentioned i.e. SP-B, SP-C, PC, PG, DPPC.

Only 20 % of the doctors preferred SP-B, SP-C, PC, PG, DPPC options.

Q4. Doctor which is the most accepted form of administration by patients?

Dose Forms	No. of Responses
Lyophilized	34
Solution	66

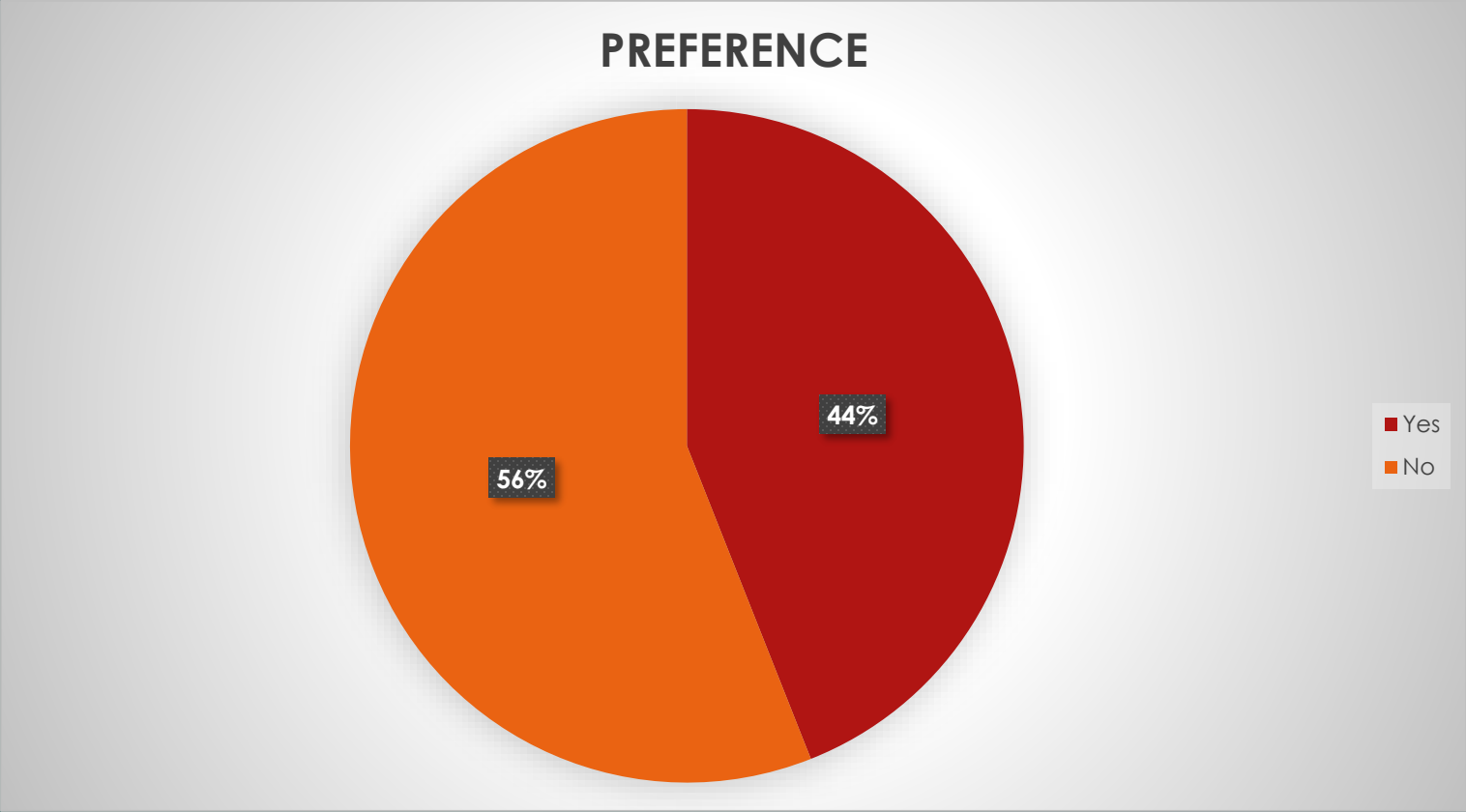


INTERPRETATION

For administration of the surfactant in patients, 34% of the doctors shown response on lyophilized form and 66% of the doctors shown response on solution form

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

Effective Source	No. of Responses
Yes	44%
No	56%



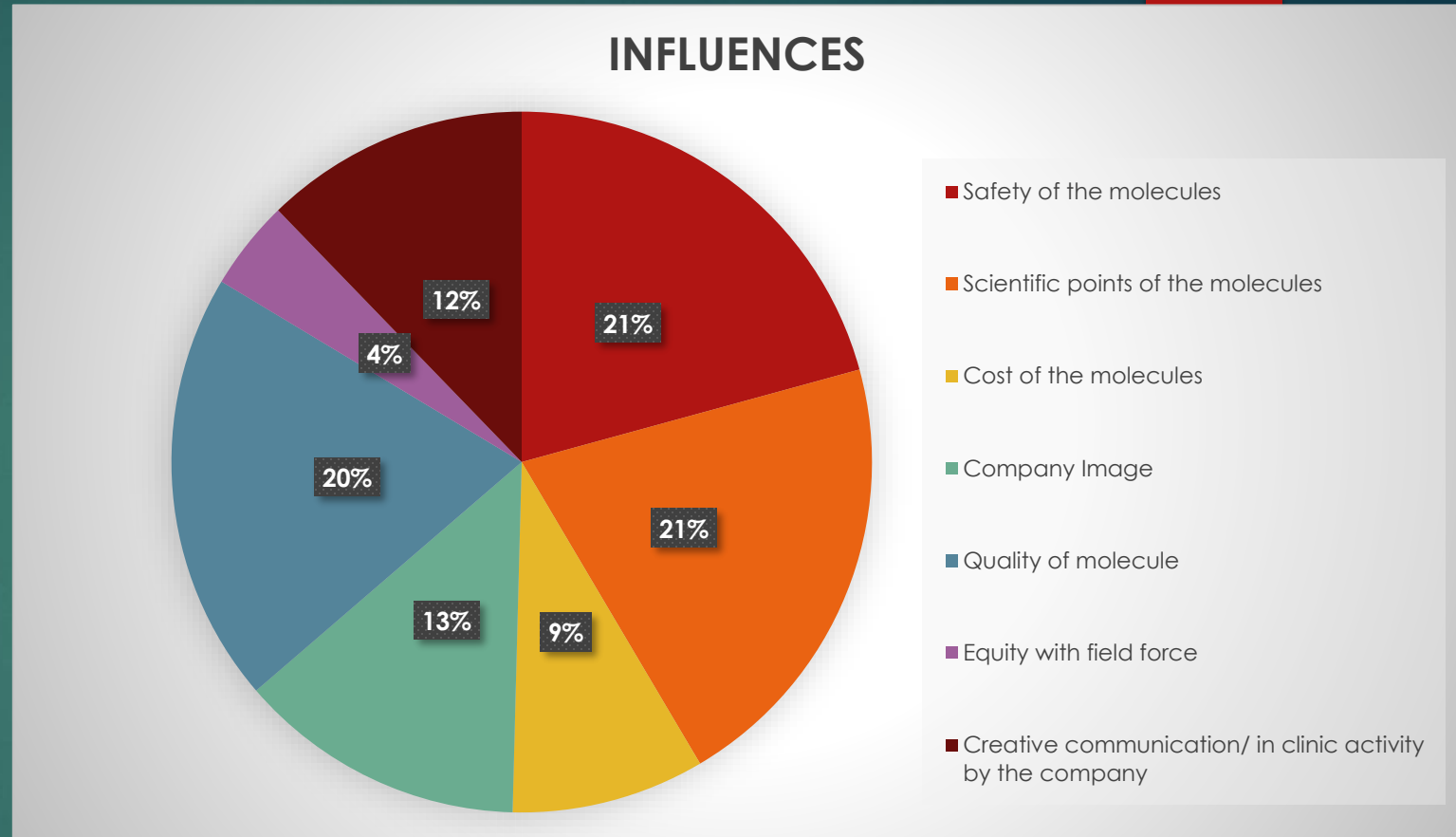
INTERPRETATION

56 % of the doctors agreed that bovine natural surfactant is an effective than porcine based

44 % of the doctors agreed that porcine based natural surfactant is an effective than bovine based

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

Influences Attributes	No. of Responses
Safety of the molecules	100
Scientific points of the molecules	100
Cost of the molecules	43
Company Image	64
Quality of molecule	96
Equity with field force	20
Creative communication/ in clinic activity by the company	59

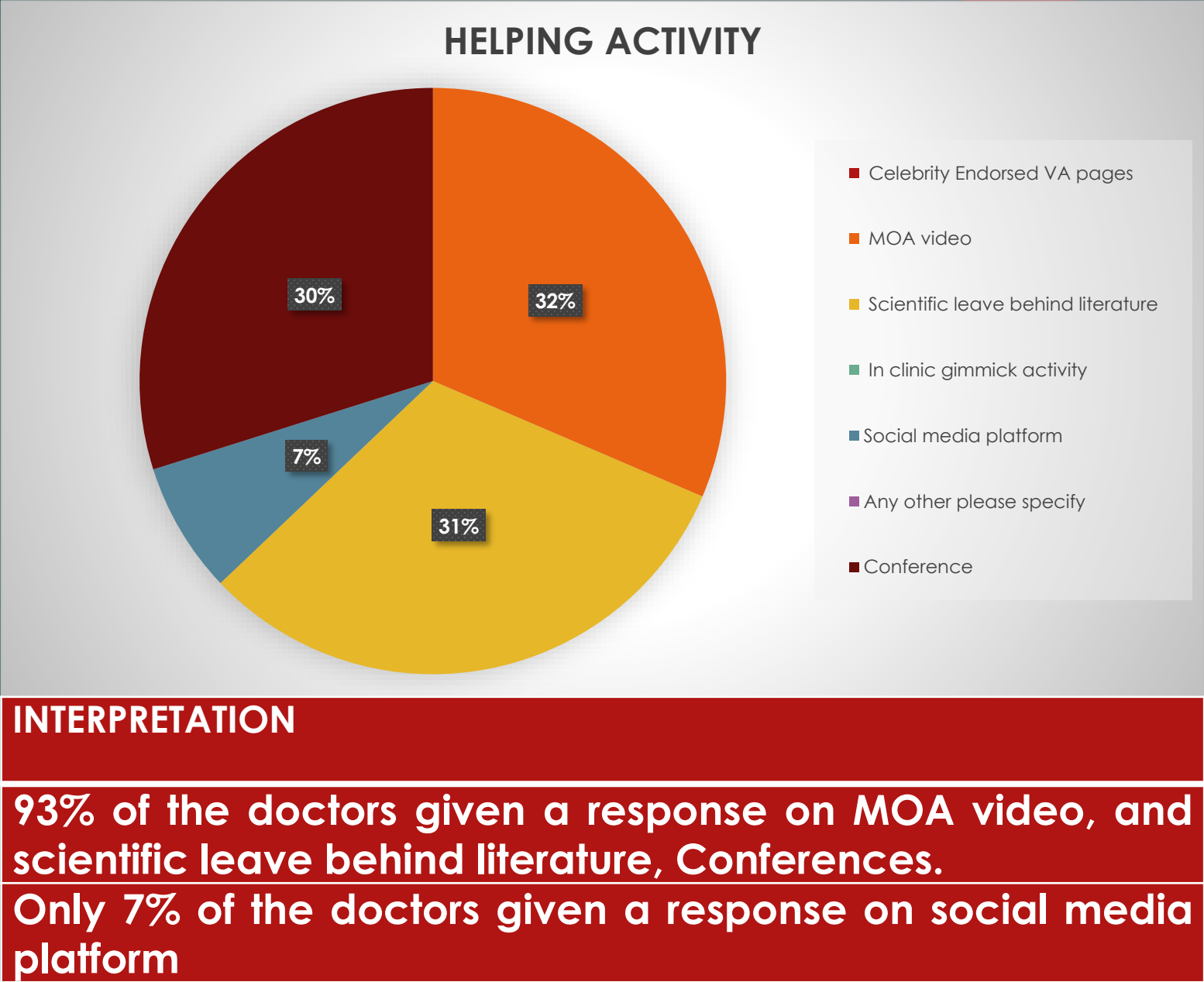


INTERPRETATION

96 % of the doctor's prescription influence by cost of the molecules, scientific points of the molecules, safety of the molecules, quality of molecule, creative communication or in clinic activity by the company. Only 4 % of the doctors shown their preference is equity with field force.

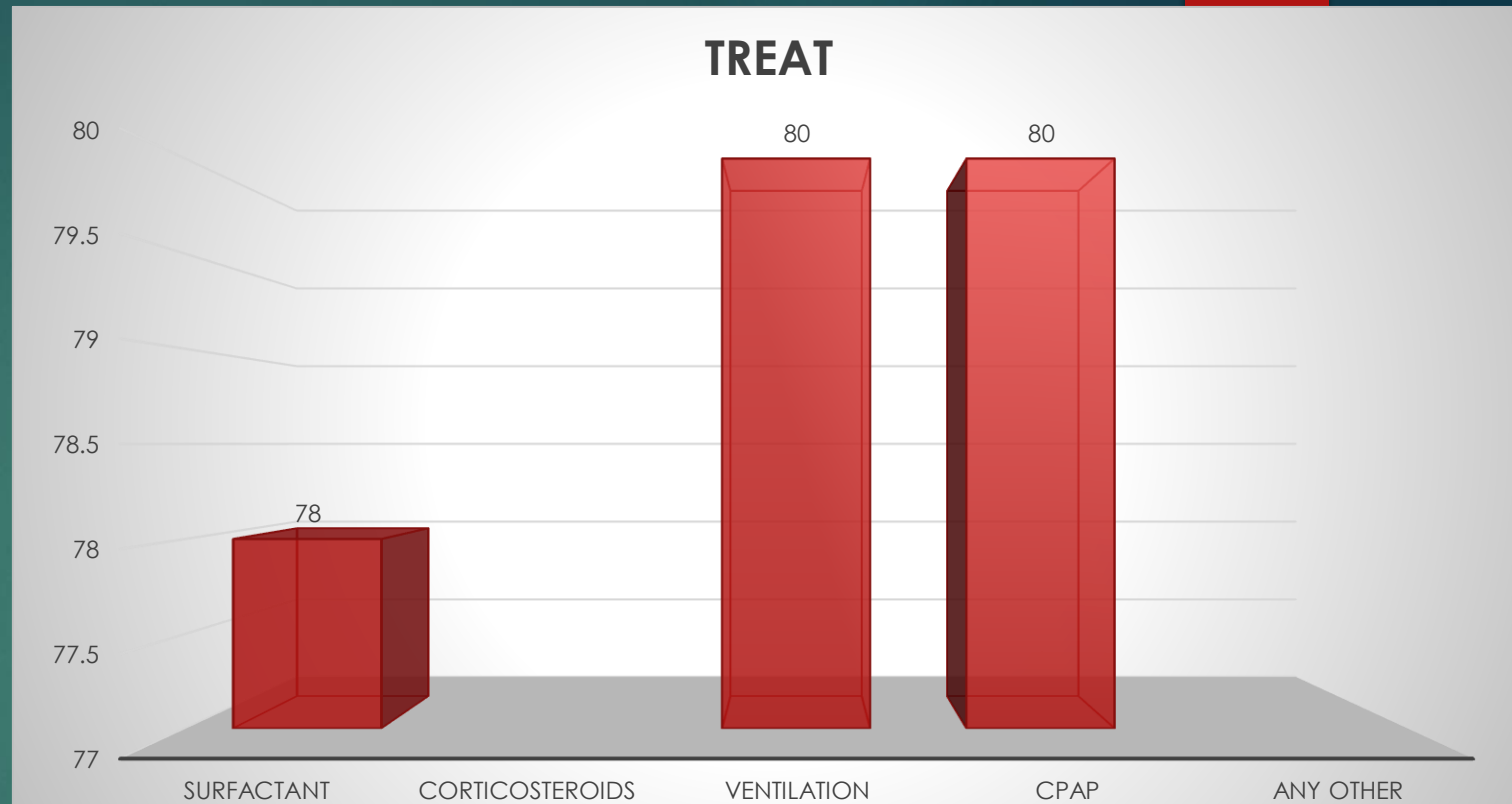
Q8. Doctor which of the following activities will help you in prescribing the Natural surfactant?

Prescribing Activity	No. of Responses
Celebrity Endorsed VA pages	
MOA video	100
Scientific leave behind literature	100
In clinic gimmick activity	
Social media platform	82
Conference	95



Q9. How do you treat RDS Patients mostly?

Treatment Methods	No. of Responses
Surfactant	78
Corticosteroids	
Ventilation	80
CPAP	80
Any other	



INTERPRETATION

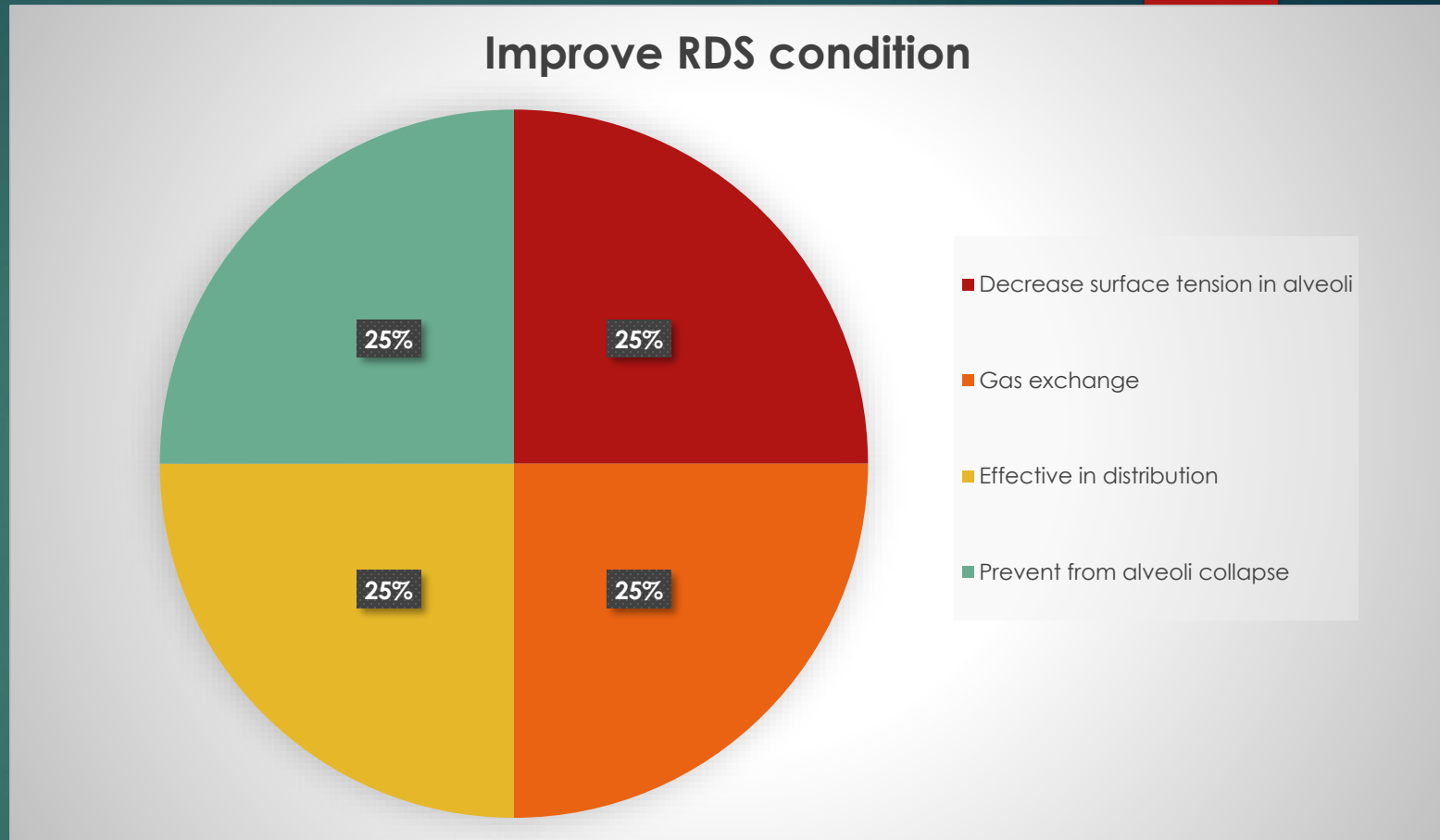
78% of the doctors go with surfactant but

80% of the doctors preferred CPAP and 80% of the doctors preferred ventilation for RDS patients

As in the case of emergency, the doctors go for CPAP and ventilation

Q10. How does the use of surfactant help in treating the RDS conditions?

Treating Conditions	No. of Responses
Decrease surface tension in alveoli	100
Gas exchange	100
Effective in distribution	100
Prevent from alveoli collapse	100
Any other	

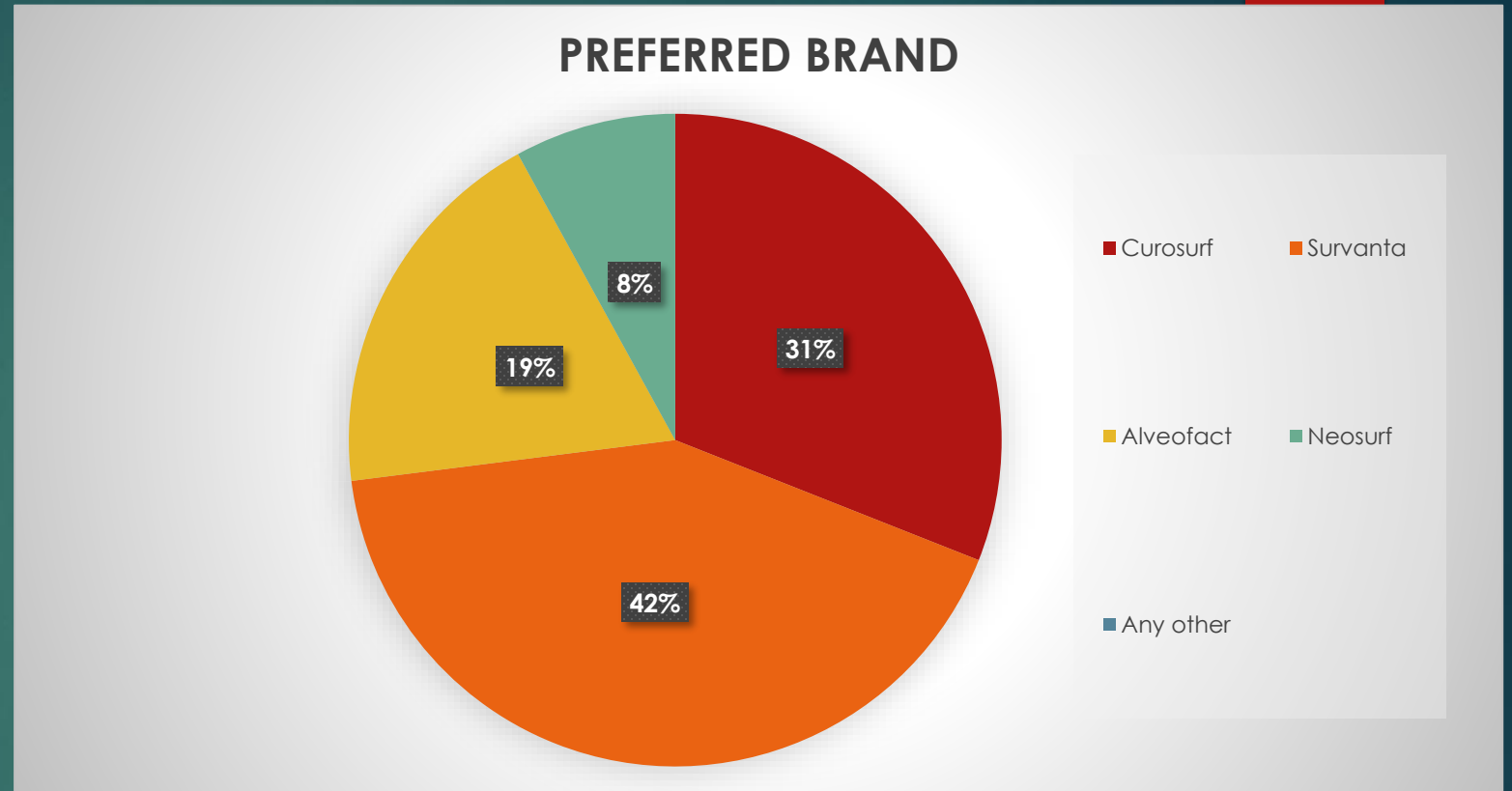


INTERPRETATION

All the doctors were agreed that the used of surfactant help in to treat the RDS conditions by decrease surface tension in alveoli, gas exchange, effective in distribution of phospholipids, and prevent from alveoli collapse.

Q11. Which brand do you preferred to prescribe Natural surfactant?

Most Preferred Brands	No. of Responses
Curosurf	31
Survanta	42
Alveofact	19
Neosurf	8
Any other	



INTERPRETATION

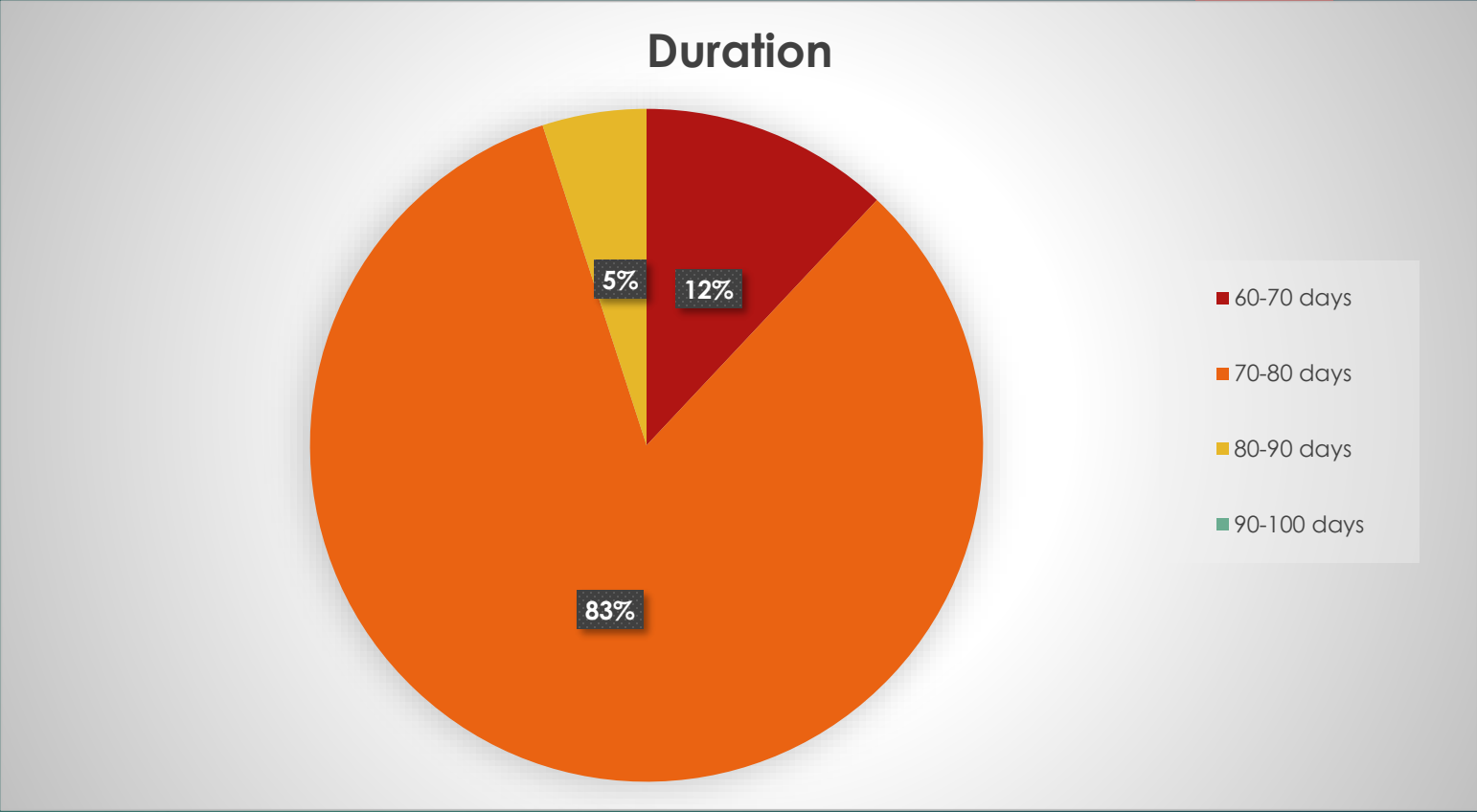
42% of the doctors go with Survanta for treating the RDS patients

31% of the doctors go with Curosurf for treating the RDS patients

8% of the doctors go with Neosurf for treating the NRDS patients and only 19% of the doctors go with Alveofact for treating the NRDS patients

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

Duration	No. of Responses
60-70 days	15
70-80 days	65
80-90 days	5
90-100 days	



INTERPRETATION

83% of the doctors said that 70 to 80 days of hospitalization is required for treating the RDS patients and

12% of the doctors said that 60 to 70 days of hospitalization is required for treating the RDS patients

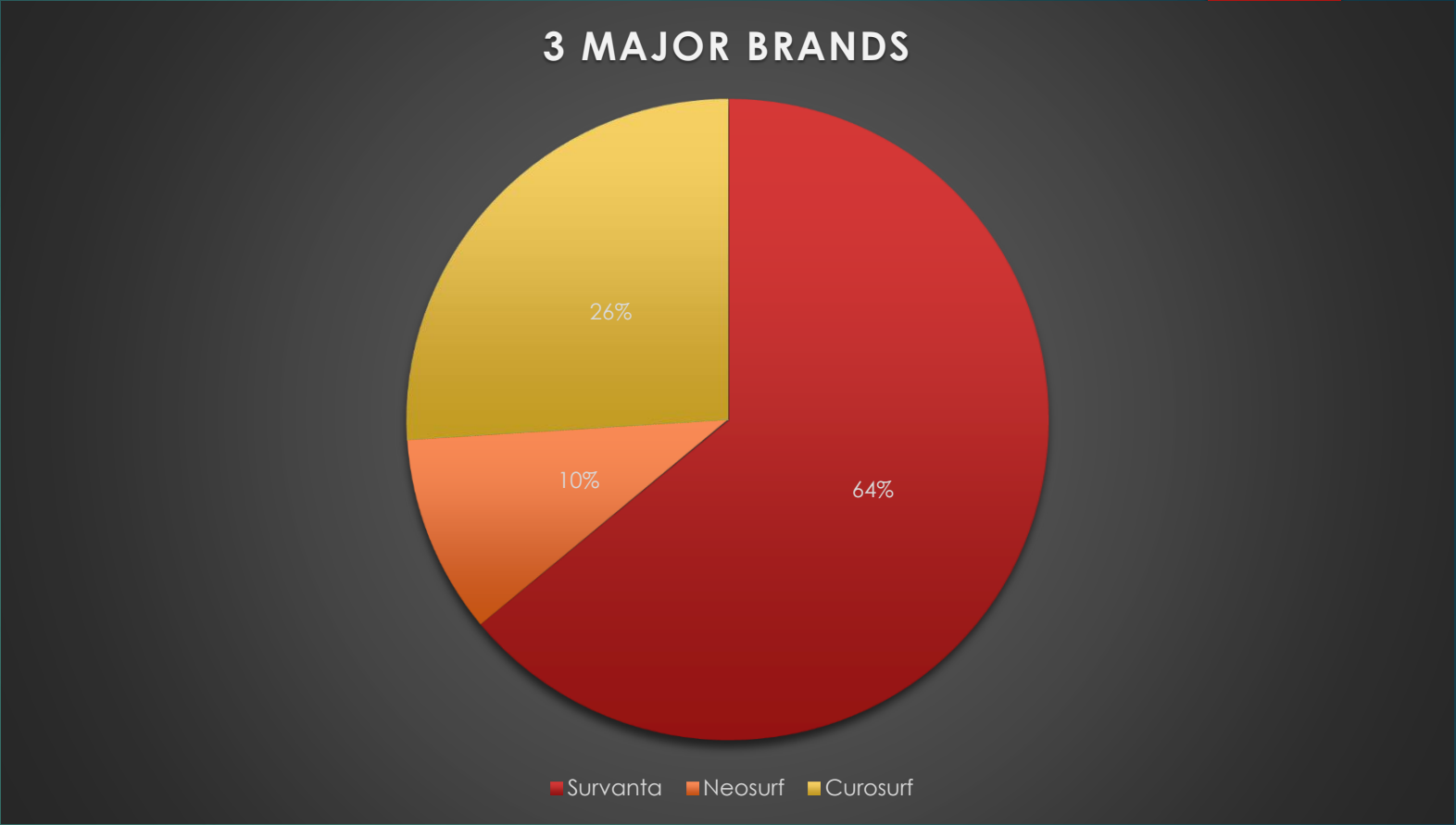
Only 5% of the doctors preferred 80 to 90days of hospitalization is required for treating the RDS patients



RETAIL CHEMIST PRESCRIPTION AUDIT {Natural Surfactant (ALVEOFACT)}

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

Major Brands	No. of Responses
Survanta	64
Neosurf	10
Curosurf	26



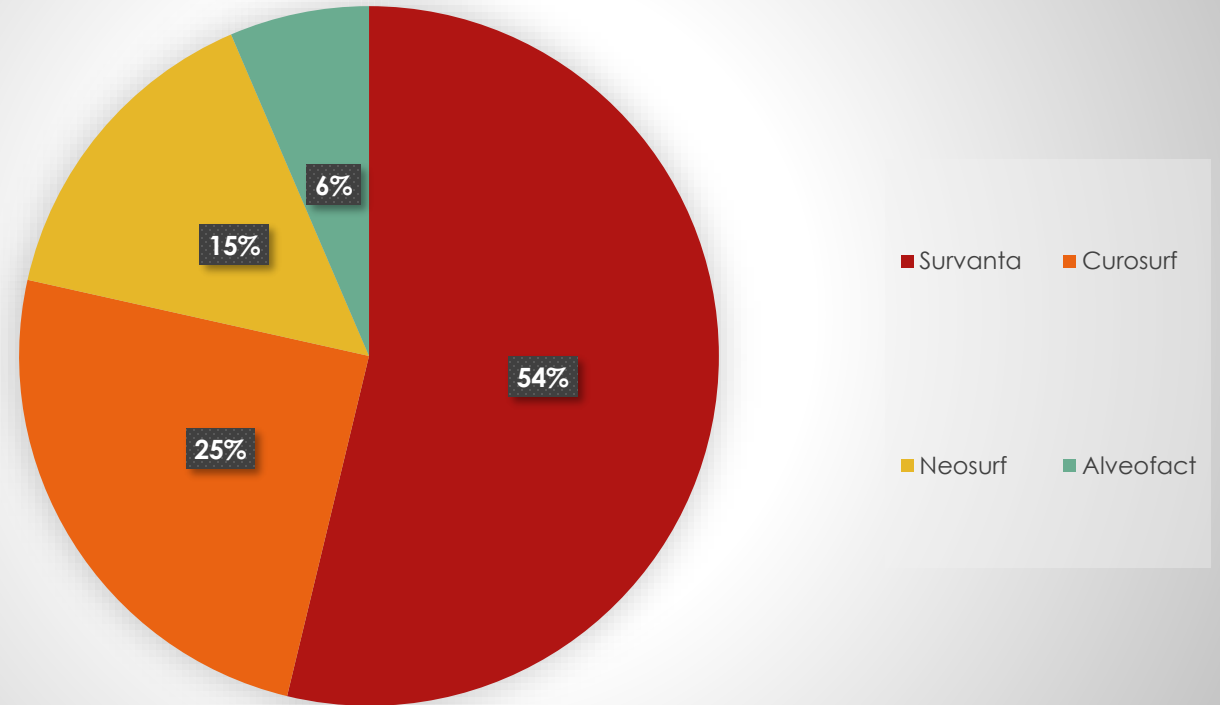
INTERPRETATION

It was found out that 64% of the retailers sell Survanta most on the counter, 10% of the retailers sell Neosurf most on their counter, and 26% of the retailers sell Curosurf most on their counter. So as per the above data Survanta is the highly selling brand in the selected cities of Gujarat.

Q2. How much do you sell per month?

Brand Names	Sales/ Month
Survanta	250
Curosurf	115
Neosurf	70
Alveofact	30

SALE PER MONTH



INTERPRETATION

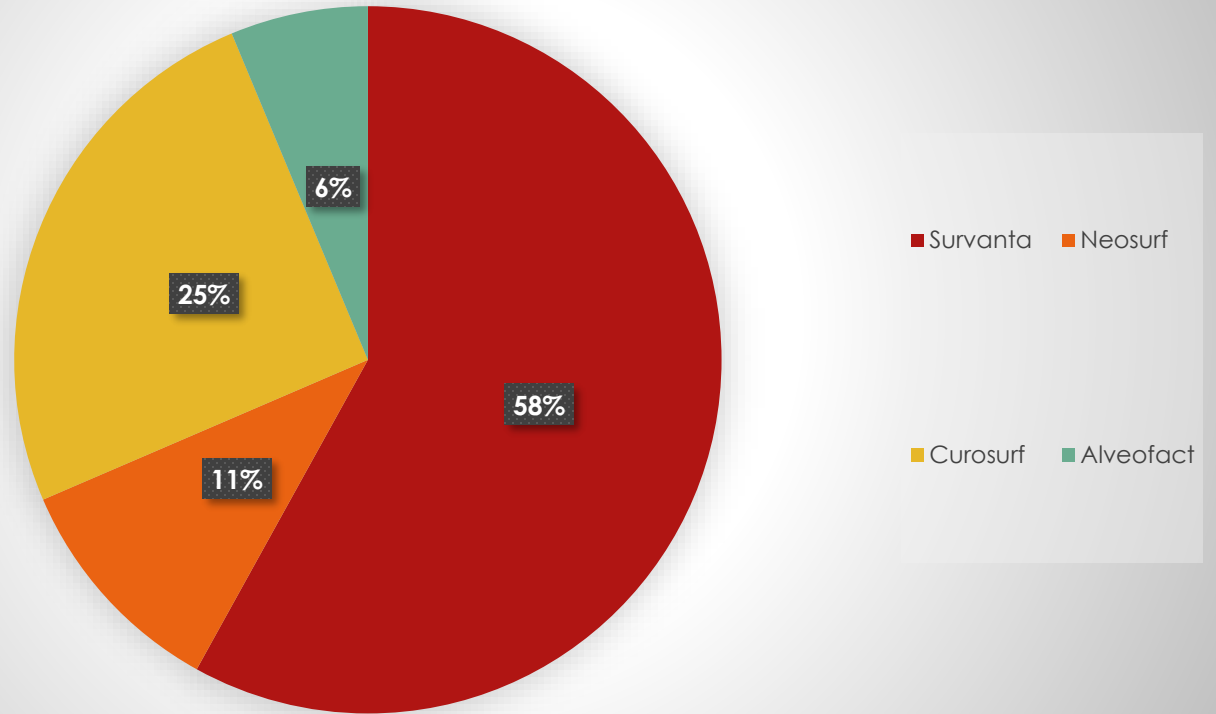
It was observed that according to the total respondent 54% of retailers said 250 vials Survanta sold per month, 25% of retailers said 115 vials of Curosurf sold per month, 15% of retailers said 70 vials of Neosurf per month, and 6% of the retailers said 30 vials Alveofact sold per month.

So as per above data Survanta is the highly selling Natural Surfactant per month in the selected cities of Gujarat.

Q3. How much stocks do you have now?

Brand Name	Stocks Available
Survanta	83
Neosurf	15
Curosurf	36
Alveofact	9

STOCK PER MONTH



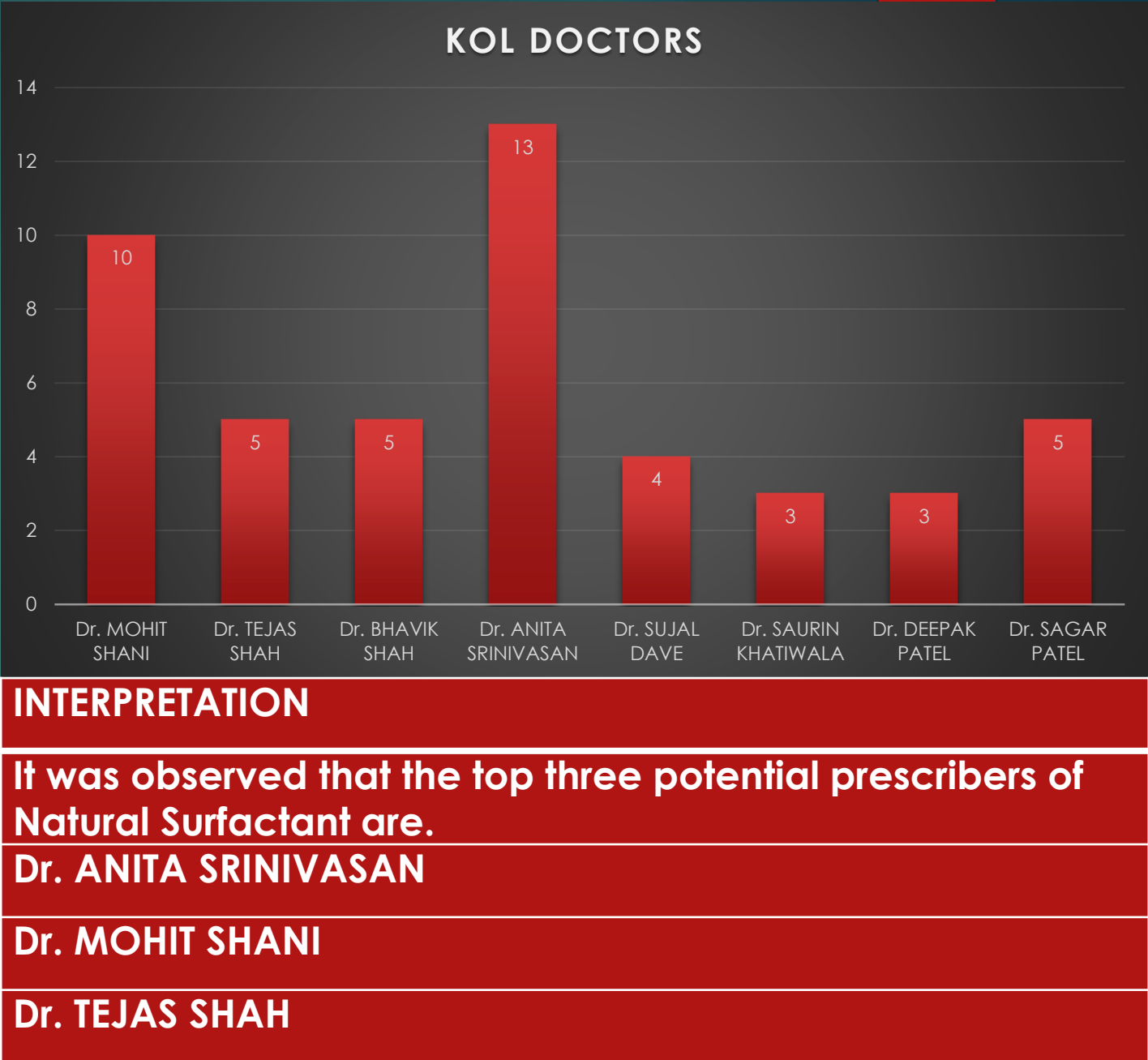
INTERPRETATION

It was found that 58% of the retailers have 83 vials stock of Survanta, 11% of the retailers have 15 vials stock of Neosurf, 25% of the retailers have 36 vials stock of Curosurf, and 6% of retailers have 9 vials stock of Alveofact.

So as per above data Survanta is highly available stocks of Natural Surfactant in the selected cities of Gujarat.

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

Doctors Name	No. of Prescriptions.
Dr. MOHIT SHANI	10
Dr. TEJAS SHAH	5
Dr. BHAVIK SHAH	5
Dr. ANITA SRINIVASAN	13
Dr. SUJAL DAVE	4
Dr. SAURIN KHATIWALA	3
Dr. DEEPAK PATEL	3
Dr. SAGAR PATEL	5



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 in selected Cities Gujarat i.e. 64% Survanta.
- ▶ It was observed that most selling Natural surfactant dosage strength in selected cities of Gujarat i.e. 4ml Survanta.
- ▶ It was found out that Dose per Kg required of Natural Surfactant in selected cities, Gujarat i.e. 45mg Alveofact, 100mg Survanta, 200mg Curosurf, and 135mg Neosurf.
- ▶ The overall finding of the study helped us to understand the prescription behavior and the reason behind the compliance they are facing while prescribing Natural Surfactant.
- ▶ 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