Effects of Beracsurf and Curosurf in the Treatment of Respiratory Distress Syndrome in Preterm Infants

Parisa Darvish Mohammadi[1], Ahamadreza Ghalami Nobar[2], Elnaz Shaseb[3*], Mohammadbagher Hosseini[3], Parvin Sarbakhsh[4], Manijeh Mostafa Gharabaghi[5]

[1]School of Pharmacy, Tabriz University of Medical Sciences, Tabriz, Iran
[2]Student Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran
[3]Clinical Research Institute, Tabriz University of Medical Sciences, Tabriz, Iran
[4]Department of Epidemiology and Biostatistics, School of Health, Tabriz University of Medical Sciences, Tabriz, Iran
[5]Alzahra Hospital, Children Medical Research and Training Hospital, Tabriz University of Medical Sciences, Tabriz, Iran

OPEN ACCESS

***Corresponding Author:**
Clinical Research Institute, Tabriz University of Medical Sciences, Tabriz, Iran

Citation:
Darvish Mohammadi P, Ghalami Nobar A, Shaseb E, Hosseini M, Sarbakhsh P, Mostafa Gharabaghi M. Effects of Beracsurf and Curosurf in the Treatment of Respiratory Distress Syndrome in Preterm Infants. *Iranian biomedical journal*. Supplementary (12-2024): 128.

ABSTRACT

Introduction: Respiratory distress syndrome (RDS) is the most common respiratory disorder in preterm infants, resulting from insufficient lung development and surfactant deficiency. Various natural and synthetic surfactants are used to treat RDS. Curosurf and bractant are two commonly used natural surfactants for this condition. This randomized clinical trial compared the efficacy of these two natural surfactants in preterm infants with RDS.

Methods and Materials: This clinical trial was conducted on 200 infants for eight months at the Neonatal Intensive Care Unit of AL-Zahra Hospital. Preterm infants weighing 2000 g and born 34 weeks of gestational age diagnosed with RDS were randomly assigned to receive either beractant (4 mg/kg every 6 hours) or curosurf (2.5 mg/kg every 12 hours). The primary outcome was a change in the fraction of inspired oxygen (FiO_2) requirements. Additional outcomes, including the number of surfactant doses, duration of mechanical ventilation, length of hospital stay, and mortality rates, were assessed using statistical analysis.

Results: A total of 200 infants were included (100 per group). The reduction in FiO_2 from baseline to final measurement was more significant in the beractant group (49.8% vs. 53.8%; $p = 0.05$) than the other group. The beractant group required fewer repeat surfactant doses than the curosurf group (22.2% vs. 45.5% for the 4th dose; $p = 0.001$). The length of hospital stay was shorter in the beractant group (15.48 days vs. 20.13 days; $p = 0.01$) than curosurf group, but mortality rates did not differ significantly between groups.

Conclusion and Discussion: The Iranian-produced beractant was at least as effective as curosurf in improving oxygenation and reducing the need for repeat surfactant doses in preterm infants with RDS. Beractant was also associated with shorter hospital stays, potentially making it a more cost-effective treatment option. These findings support using beractants as an effective surfactant replacement therapy for RDS in preterm infants. However, further investigations with a broader sample size are needed to support the results.

Keywords: Infant, Respiratory disorders, Respiratory distress syndrome

[Downloaded from ibj1.pasteur.ac.ir on 2026-10-20]

[DOI: 10.61186/ibj.25th-11th-IACRTIMSS]