

## Correspondence: Probiotic (*Lactobacillus reuteri* Protectis) in premature infants – Authors' reply

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*The impact of probiotics (Lactobacillus reuteri Protectis) on the treatment, course and outcome of premature  
infants in the Intensive Care Unit in Mostar. J Pediatr Neonat Individual Med. 2016;5(2):e050228.  
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*Comments can be found in the following article:*

Mandal A, Sahi PK. *Correspondence: Probiotic (Lactobacillus reuteri Protectis) in premature infants.  
J Pediatr Neonat Individual Med. 2017;6(1):e060129. doi: 10.7363/060129.*

### Keywords

Probiotics, neonatal intensive care, preterm, necrotizing enterocolitis.

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**Dear Editor,**

We thank the authors for their interest and comments [1] on our paper [2]. They have raised some very valid points.

1. At the Intensive Care Unit (ICU), 131 preterm infants were treated in 2013 and 100 preterm infants in 2014. A random selection of preterm infants who met the set criteria in 2014 and 2013 became the subjects of the study. The number of infants who received administration of probiotics in 2014 was 53, and the number of infants who were not given probiotics in 2013 was around 57. Thus, for the purposes of the analysis, the infants were selected randomly among those who met the criteria (outlined in the “methods” section) and in order to facilitate the analysis an equal number of infants (50) from each year under analysis were taken.
2. As the study in question is a retrospective analysis, the probiotics were not administered during hospitalization for research purposes but for the observed beneficial effects on the digestion of infants. As the study is a retrospective research, it was not necessary to obtain written consent or the consent of the Ethics Board. The probiotics were also administered in our ICU in the years that followed.
3. The “study population and methods” section of the article explains the definitions of sepsis, necrotizing enterocolitis and feeding intolerance. Ranitidine was administered from the 1<sup>st</sup> day of life in cases of feeding intolerance; however, it was administered for a shorter number of days when administered along with probiotics, because ranitidine can cause the onset of late sepsis, as has been noted by recent studies. Therefore, ranitidine has not been frequently used in our ICU in the past few years. It is possible that this is linked to the administration of probiotics, which have a positive effect on digestion.
4. Correct. The laboratory results were poorer in 2014, which may be linked to the increased number of pregnant women who had complications during pregnancy. The probiotics alone, administered to the children along with treatment protocols, were unable to contribute to the significant improvement of the results, but they did significantly affect the shorter period of hospitalization, feeding tolerance

and, consequently, the outcome of treatment, as we explained in our results. It was not our aim to suggest that probiotics affect the laboratory results; our aim was the treatment outcome.

5. Of course, many factors affect the treatment outcome. We wanted to suggest that the preterm infants who had been treated in our unit began tolerating food much sooner, had less ranitidine administered and spent fewer days in ICU irrespectively of the factors connected with the mother or the child itself. Whether probiotics affect laboratory results was not specifically researched, our results do suggest that the survival rate of our infants is higher after the introduction of probiotics. These were our positive impressions, which we statistically analyzed and presented.
6. The preterm infants who met the criteria and had no complications began feeding from the 1<sup>st</sup> day of life perorally with small doses of glucose. The peroral administration of dairy meals in 2014 along with probiotics began from day 1 to 3, that is, the glucose was replaced with milk. The nutrition protocols are the same for all children.

**Conclusion**

The conclusion of our research is that probiotics most probably have a positive effect on the duration and outcome of treatment. Our preterm infants who were given probiotics spent a shorter period in the ICU, started imbibing full dairy meals earlier and were treated with antiulcer medication for a shorter period of time, which is a significant result for the amelioration of treatment outcome of preterm infants. With respect to our lack of experience in the administration of probiotics, we are not in the situation to assess their definite effect on the results of treatment outcome, as we stressed in our conclusion; however, during the administration of probiotics, the preterm infants did not exhibit any side-effects and the outcome was positive. Furthermore, the study did not aim to show the effects of probiotics; this is a retrospective analysis of the treatment of preterm infants and our daily impression of a better clinical status and better treatment outcomes in the treatment of preterm infants. Probiotics were new arrivals on our market in 2013 and have been administered for the past three years. Thus far, no side-effects

have been discerned. We have been very critical of the misuse of probiotics in daily practice and follow the most recent research with respect to the effects of probiotics. Therefore, our analyses in future research do not exclude the possibility of a negative opinion on the effects of probiotics on treatment outcomes. This retrospective analysis was not conducted to analyse the effects of probiotics on individual clinical states in preterm infants. The probiotics are not part of the compulsory treatment protocol, but we have observed over the past few years that, with the administration of probiotics, feeding tolerance is facilitated, particularly in preterm infants, which is an important parameter in the treatment outcome.

## Declaration of interest

The Authors declare that there is no conflict of interest.

## References

1. Mandal A, Sahi PK. Correspondence: Probiotic (*Lactobacillus reuteri* *Protectis*) in premature infants. J Pediatr Neonat Individual Med. 2017;6(1):e060129. doi: 10.7363/060129.
2. Jerković Raguž M, Brzica J, Rozić S, Šumanović Glamuzina D, Mustapić A, Novaković Bošnjak M, Božić T. The impact of probiotics (*Lactobacillus reuteri* *Protectis*) on the treatment, course and outcome of premature infants in the Intensive Care Unit in Mostar. J Pediatr Neonat Individual Med. 2016;5(2):e050228. doi: 10.7363/050228.