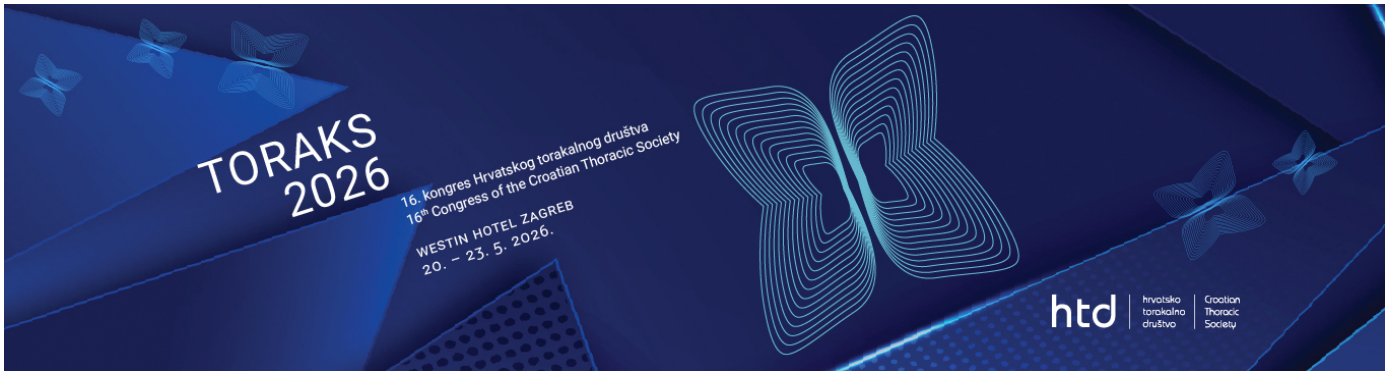


MICRONUTRIENTS AS POTENTIAL IMMUNOMODULATORS IN SEVERE ASTHMA: THE ROLE OF VITAMIN D IN REDUCING EXACERBATIONS AND IMPROVING QUALITY OF LIFE

PERIĆ RADANOVIĆ D.[1], Pavliša G.[2], Miculinić N.[2], Pevec B.[2], Puretić H.[2], Štajduhar A.[2], Vukić Bilić T.[2], Čujić T.[1], Hlubuček Čingel S.[3], Mamić M.[3], Kesić J.[2], Oreški A.[2], Rubil I.[2], Lampalo M.[2]

[1] Klinički bolnički centar Split, Split, Croatia
Klinika za plućne bolesti

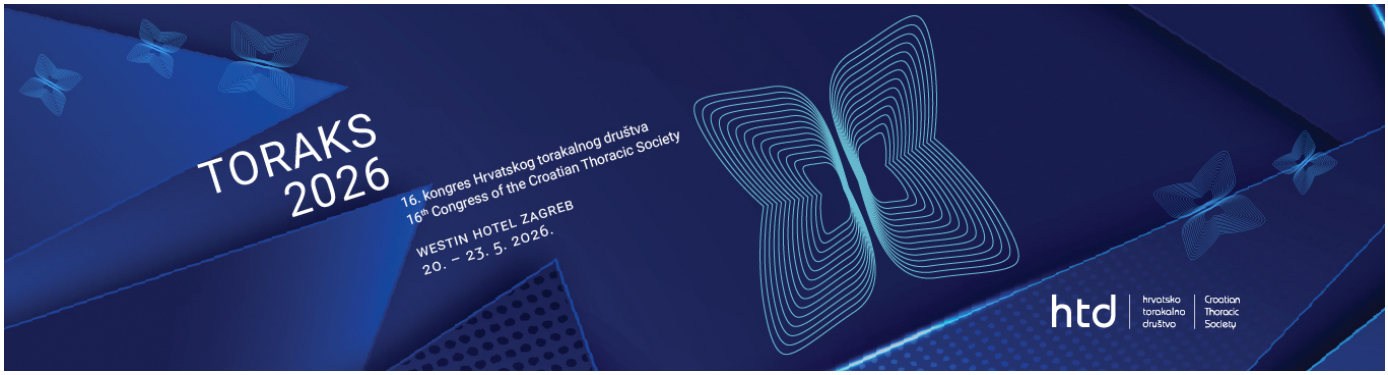
[2] Klinički bolnički centar Zagreb, Zagreb, Croatia
Klinika za plućne bolesti Jordanovac

[3] Opća županijska bolnica Požega, Požega, Croatia
Odjel za pulmologiju

Objective:

The aim of this study was to investigate the association between baseline vitamin D levels and changes in clinical, functional, and inflammatory parameters following the initiation of biologic therapy in patients with severe asthma, with an emphasis on disease control and quality of life.

Methods:



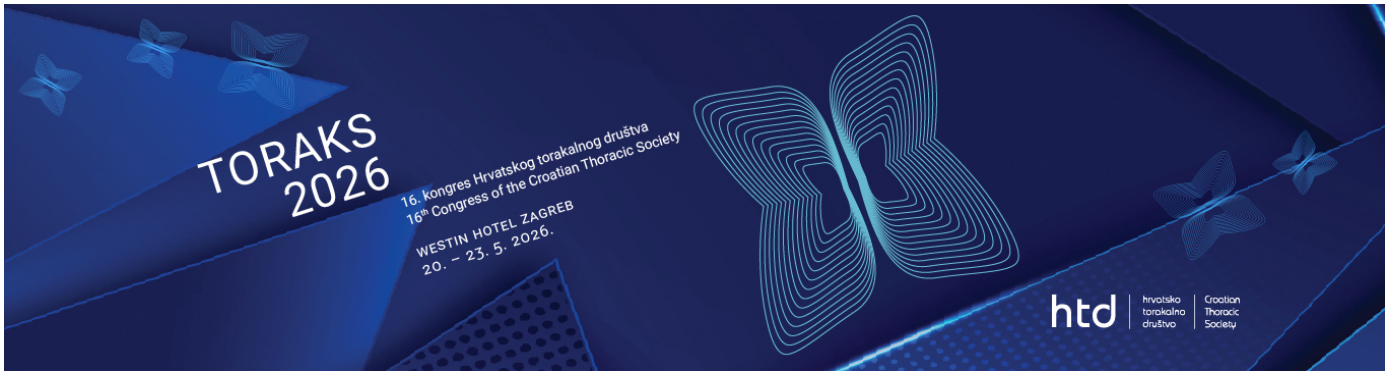
A retrospective analysis was conducted on a sample of 166 patients with severe asthma receiving biologic therapy. The correlation between baseline vitamin D concentrations and changes in the following parameters: FEV1, Asthma Control Questionnaire (ACQ) scores, CRP, FeNO, eosinophil and neutrophil counts, total IgE, and Body Mass Index (BMI) was assessed. Correlations were analyzed using the Spearman's rank correlation coefficient.

Result:

The analysis demonstrated a statistically significant positive correlation between baseline vitamin D levels and improvement in ACQ scores ($\rho = 0.221$; $p = 0.036$), indicating better subjective asthma control and a potential improvement in quality of life among patients with higher baseline vitamin D levels. Other evaluated parameters, including FEV1, CRP, FeNO, eosinophils, neutrophils, IgE, and BMI, did not show statistically significant associations ($p > 0.05$), although a non-significant trend toward improvement was observed in FEV1.

Conclusion:

As an immunomodulatory agent, vitamin D may play an important role in regulating the inflammatory response in severe asthma patients, contributing to a reduction in exacerbation frequency and an improved quality of life. The findings of this study indicate a statistically significant association with improved subjective disease control, while a consistent correlation with objective functional and inflammatory parameters was not confirmed. These results highlight the potential clinical value of vitamin D as a complementary factor in phenotyping and monitoring the response to biologic therapy; however, further prospective studies are warranted to validate these findings.


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