Salmonella spp. remain major public health problems for the whole world. A better understanding of pathogenesis of these food-borne pathogens is a prerequisite for the design of improved intervention strategies that could reduce the use of antimicrobial agents and drug-resistant Salmonellosis.

Increasing studies suggested 1,25-dihydroxyvitaminD3 (1,25D3), the active form of vitamin D, was effective in ameliorating colitis via the lumen of the intestinal tract. Stimulation of NO2 expression by 1,25D3-stimulated antimicrobial peptides production enhancing autophagy imply that vitamin D would boost autophagy. Therefore, we aimed to investigate the effect of active vitamin D3 on the severity of Salmonella colitis.

Salmonella colitis model was conducted with 6–8 wk-old male C57BL/6 mice: Streptomycin -pretreated C57BL/6 mice were mock infected with sterile PBS or infected orally with S. Typhimurium wild-type strain SL1344 for 48 h. Mice were randomly assigned to control, model and 1,25(OH)2D3 treated group. At the end of the experiment, mice were sacrificed; tissue samples from the intestinal tracts, spleens, and livers were removed for analysis of bacterial colonisation, Western blot for inflammatory markers in the children with MwH.

MwH children characterised prevalence following parameters: higher alpha -amylase (p < 0.01), glucose (p < 0.001), GGT (p < 0.001) and alkaline phosphatase (p < 0.001). Also dominated indicators of ALT (44.50 ± 8.21 U/L, p < 0.05), AST (64.92 ± 2.83 U/L, p < 0.001) and thymol (5.21 ± 0.29 IU, p < 0.001), on the basis of what we can concluded about the complications of Measles infection by reactive hepatitis. We identified increase of level of IL-2 in 5.5 times to the control group (p < 0.001), IL-6 in 25-time (p < 0.001), IL-10 in 1.7 time (p < 0.001). The levels of microelements of blood serum were lower: iodine (p < 0.001), copper (p < 0.001), zinc (p < 0.001) by our study. Phosphorus level was higher in the group of children with the Measles in association with Helminthiasis (p < 0.001). The micro elements parameters of urine were lower in the study group: iron (p < 0.001), copper (p < 0.001), zinc (p < 0.001) and iodine (p < 0.001). Level of phosphorus were increased (p < 0.001).

Conclusions The dates of our investigation in the children diagnosed with Measles in association with Helminth infestation presented significant increase of inflammation markers and an imbalance of mineral metabolism.

CGD is an immunodeficiency caused by mutations in genes encoding subunits of the NADPH oxidase complex. Normally, assembly of the NADPH oxidase complex in phagocytes of phagocytic cells leads to a “respiratory burst” essential for the clearance of microorganisms. CGD patients lack this mechanism, which results in life-threatening bacterial and fungal infections and granuloma formations. The leading cause of death are pneumonia and pulmonary abscess, septicemia and brain abscess. In neurological manifestations various pathogens have been involved including Aspergillus spp., S. prolificans, A. infectiosa, Salmonella and Staphylococcus spp. There are only some several reports on fungal brain and spinal cord infection due to Candida spp. To decrease mortality and morbidity from fungal infections the prophylactic use of itraconazole or voriconazole is widely recommended. A relatively new azole, posaconazole is active in pulmonary and cerebral fungal manifestations, indeed may be effective against fungi with inherent resistance to AmpB or voriconazole. In the past twenty years we have managed seven children with CGD. We present a two – year history of an X-linked CGD patient with brain abscess. In spite of our effort we were unable to identify any causative pathogen. The brain abscess did not respond to conventional antibacterial and antifungal treatment for a long time. Based on the findings and literature we presumed the causative agent might be some kind of moulds. We suppose the use of echinocandin and posaconazole as salvage therapy. It has resulted significant regression of the brain abscess.