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SCIENTIFIC LETTER

Ondansetron as a Supportive Therapeutic Agent for Severe Pruritus in Pediatric Patients with Chronic Cholestasis

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To the Editor: Pruritus is a devastating and difficult to control feature of pediatric-chronic-cholestasis and intractable-pruritus can be the sole-indication for liver-transplantation. Pruritus pathophysiology is not well-understood, but is driven by chronic inflammation stimulated by various pruritogens, such as bile-salts, steroid-hormones, histamine, endogenous-opioids, and serotonin [1]. Ondansetron is a 5-hydroxy-tryptamine 3 (5-HT3) receptor-antagonist, that is used to combat emesis and was proposed as a potential-therapy for pruritus [2]. We evaluated the efficacy and side-effects of orodispersible ondansetron for the first time as a supportive-treatment for severe-pruritus in chronic-cholestatic-children.

Twenty-seven children (7±3.2 y) were recruited [14 progressive familial intrahepatic cholestasis (PFIC), 12 Alagille-syndrome and 1 biliary-atresia with failed Kasai-operation]. Pruritus severity was evaluated at baseline using five-parameters: visual-analogue-scale (VAS) [3], four-rate sleep disturbance scale [4], itching in sensitive areas, using sharp-objects during itching and presence of pruritus scars. Ondansetron was used as an adjuvant therapy to long-standing-therapy (>3 mo), which was either ursodeoxycholic acid, cholestyramine or both. Ondansetron (4 mg-8 mg) was given once at night for 8 wk. Patients were followed-up for pruritus severity and drug side-effects at one and two weeks, then every other week, while routine laboratory investigations were assayed at baseline and at the end of the treatment.

At baseline, pruritus had a score of 10/10 by VAS in 17/27 children (62.9%), and 3/3 by sleep disturbance scale indicating severe sleep disturbance in 18/27 (66.7%). Twenty-two children were adherent to treatment and 14 compliant children showed significant improvement (63.6%). Patients were considered significantly improved when at least 3/5 parameters were improved, provided that improved sleeping was one of them. Significant improvement in VAS when children had ≥50% reduction in score [12/22 (54.5%)], while in the sleep disturbance scale 14/22 (63.6%) slept comfortably. For the other three parameters: itching in sensitive areas, using sharp objects and pruritus scars, a negative response/examination was recorded in 15 (68.2%), 17 (77.3%) and 11 (50%) children, respectively. Significant side-effects were not reported apart from one patient who developed severe diarrhea, for which ondansetron was stopped after 2 wk. Laboratory investigations showed no significant changes after 8 wk of treatment. In conclusion, ondansetron is a promising adjuvant therapy for severe pruritus in children with chronic cholestasis, especially when compliance to cholestyramine is not optimum.

Declarations

Conflict of Interest None.

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