

Virus causes acute upper respiratory tract infections, including common cold and acute rhinosinusitis. These infections constitute the most common diseases in children and are also extremely common in adults. They have a significantly impact on health and quality of life, especially when the infections are recurrent<sup>(1, 2)</sup>.

In the last years, there has been increasing experimental data supporting the fact that nasal epithelium is the primary portal of entry for respiratory viruses as well as an active component of initial host responses against viral infection<sup>(3)</sup>.

The cascade of inflammation initiated by nasal epithelial cells will lead to damage by the infiltrating cells, causing edema, engorgement, fluid extravasation and mucus production , thus resulting in nasal congestion, and eventually leading to **acute rhinosinusitis**<sup>(4-7)</sup>. Moreover, infections are perhaps more likely to be a key cause of exacerbation of **chronic rhinosinusitis**<sup>(8, 9)</sup>, especially with increasing evidence that rhinovirus infection can drive eosinophilic inflammation <sup>(10, 11)</sup> and a focus on prevention and management of virus infections may be more effective than treating secondary infections with antibiotics and eosinophilic flare ups with corticosteroids.

On the other hand, the poor clearing of nasal cavity causes accumulation of foreign particles, particularly bacteria and virus, promoting inflammation and infections.<sup>(12-14)</sup> To reduce signs and symptoms, antipyretic, decongestant and antibiotic drugs are frequently prescribed to treat viral infection symptoms. This leads to an overuse and misuse of these medications. Thus, alternative strategies for prevention and treatment of viral infections may represent key adjuvant therapies that also contribute to reduce drug consumption.

In this sense, **nasal irrigation** is frequently prescribed by allergists, general practitioners, otolaryngologists, and paediatricians for both prevention and treatment of upper respiratory infections. This therapeutic indication has become more relevant since last decade. As, nasal irrigation is employed as a first-line treatment for URTI symptoms, recommended by different position papers.<sup>(3, 15)</sup>

Several studies were planned to determine the clinical impact of nasal irrigation during infections <sup>(16, 17)</sup>. Studies carried out in adults, reported a reduction in the time of resolution. In children with nasal irrigation, both nasal secretion and nasal obstruction were significantly reduced at the end of the treatment period. Children receiving nasal irrigation for more than nine weeks had a reduced need for using antipyretics, nasal decongestants, mucolytics and systemic antibiotics compared to non-irrigated children. Moreover, in the same period, children in the saline group reported significantly fewer illness, school absences, and complications<sup>(18)</sup>.

After a publication of the Cochrane review<sup>(19)</sup>, some other studies regarding nasal irrigation and upper respiratory tract infections were published and confirmed the efficacy of this treatment<sup>(20-23)</sup>. A pilot, open labelled, randomised controlled trial assessed the efficacy of hypertonic saline nasal irrigation for the common cold. This study showed that nasal irrigation and gargling reduced the duration of upper respiratory tract infections<sup>(24)</sup>.

Moreover, different studies have shown that nasal irrigation with xylitol, reduces nasal symptoms in patients with common colds.<sup>(21, 25)</sup>

Thus, based on clinical and scientific evidence, consensus guidelines consider nasal irrigation as safe and effective treatment for viruses and bacteria mediated infections, including common cold and acute rhinosinusitis.

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