

2024

RIME: A new spin on a more familiar infection

Ilana Bresky

Kristi Soileau DDS, MEd, MSHCE, FACD, FICD
New Orleans Dental Association

Follow this and additional works at: <https://commons.ada.org/noda-news>



Part of the [Dental Public Health and Education Commons](#), and the [Oral Biology and Oral Pathology Commons](#)

Recommended Citation

Bresky, Ilana and Soileau, Kristi DDS, MEd, MSHCE, FACD, FICD (2024) "RIME: A new spin on a more familiar infection," *NODA News*: Vol. 62: No. 7, Article 4.

Available at: <https://commons.ada.org/noda-news/vol62/iss7/4>

This Feature is brought to you for free and open access by the State & Local Dental Publications at ADACommons. It has been accepted for inclusion in NODA News by an authorized editor of ADACommons. For more information, please contact commons@ada.org.

RIME: A new spin on a more familiar infection

Submitted by Ilana Bresky, B.S.

Dental professionals should become familiarized with Reactive Infectious Mucocutaneous Eruption, or (RIME), which presents with erosive mucositis typically affecting two or more mucous membranes, frequently in the oral cavity, and oftentimes is accompanied by skin lesions



Figure #1 (RIME – Lips)

or rash. The condition typically manifests in patients exhibiting signs of an infectious trigger, distinct from eruptions caused by medication intake(1). Common presentations are oral erosions (Figures 1, 3), bilateral pink eye with possible mucosal purulence (Figure 2), or urogenital lesions(2). RIME is a post-infectious mucocutaneous condition generally preceded by flu-like symptoms(3), caused by bacterial infections like *Mycoplasma pneumoniae* (*M pneumoniae*), *Chlamydia pneumoniae*, and Group A *Streptococcal* pharyngitis.

Additionally, viral respiratory pathogens such as Metapneumovirus, Parainfluenza, Rhinovirus, Enterovirus, and Influenza infections may also be implicated, along with severe acute respiratory syndrome (SARS-C-o-V-2) infection(3).

RIME involving respiratory disease is the most fatal, yet still rare, with a mortality rate of around 3%(4). *M pneumoniae* is the most common initial cause of mucocutaneous disease, as it induces RIME in about 25%-30% of patients(5), while recurrent episodes elicited by many different infectious agents(1) are estimated at 9%-38%(5). Initial onset RIME is most prevalent in children and adolescents, however, young to middle aged adults may also be infected(4). Because of the relatively frequent recurring nature of infection, and although some patients may experience initial eruptions as an adolescent, one may continue to have the repeated

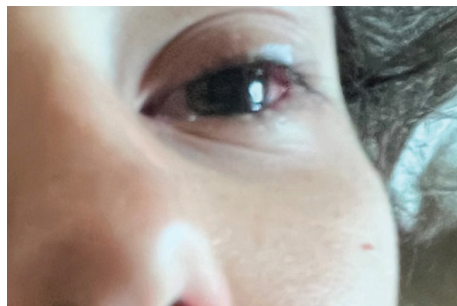


Figure #2 (RIME – Eye)

infections well into adulthood. An extreme example of this is a report that shows as many as seven recurring episodes in fewer than three years(1).

Data from 2022 states that 54%-62% of patients are male(1), at a 2:1 ratio(4). Inconsistent evidence on targeted demographics exists, with one study finding recurrent patients more likely to be African American and older, while a conflicting study found no demographic differences among patients with recurrent and isolated disease(6). Unlike the onset of RIME, which is triggered by



diverse pathogens, recurrence can be triggered by distinct pathogens, though intensity generally decreases in these subsequent episodes(7), but with greater rates of psychiatric complications (specifically anxiety and depression) and more severe sequelae(6).

'RIME' is a relatively new term that was initially designated strictly to the category of MIRM (*Mycoplasma*-induced rash and mucositis), given that all then-recognized cases were respiratory, typically associated with *M pneumoniae*(4). In 2018, however,

(Continued on page 12)



Figure #3 (RIME – Tongue)

Same patient 3 weeks later with remaining lesion on tongue, although labial lesions had healed.

RIME: A new spin on a more familiar infection . . .

Continued from page 9

the term RIME was adopted to distinguish patients whose mucocutaneous eruption arose from other various respiratory-related illnesses(1).

Significant to dental professionals is the fact that RIME is considered a distinct entity from similar conditions with overlapping symptoms, such as Stevens-Johnsons syndrome (SJS). RIME typically involves predominantly mucosal surfaces and manifests post-infection, unlike SJS, which primarily affects the skin, often as a reaction to medication, and tends to have a milder course(3). Another disease with a likeness to RIME is

erythema multiforme(1), which is most commonly induced by herpes simplex virus and has characteristic targetoid skin lesions with variable mucosal involvement(8).

Effective treatment involves targeting the initial infection with antibiotics, followed by a possible combination of systemic steroids, antiviral therapies, and immunomodulatory agents to halt mucocutaneous progression(9). Various regimens incorporating corticosteroids, intravenous immunoglobulin (IVIG), cyclosporine, or tumor necrosis factor (TNF)-alpha inhibitors have shown efficacy in stopping

mucocutaneous advancement(9).

There is currently insufficient evidence to support the prophylactic use of antibiotics for preventing initial RIME or its recurrence(1); however, both topical and systemic steroids have demonstrated effectiveness in managing subsequent episodes(6). Additionally, patients will likely require pain management and wound care(1). Accurate diagnosis, timely consultation with appropriate medical experts, prompt treatment, and recurrence monitoring are critical for minimizing complications(6).

Citations:

- Cabana E. Understanding Reactive Infectious Mucocutaneous Eruption (RIME). The Dermatology Digest. Published June 10, 2022. <https://thedermdigest.com/understanding-reactive-infectious-mucocutaneous-eruption-rime/>
- Zhou Y, Hecht T, Smith N, Dharia T. Reactive infectious mucocutaneous eruption (RIME) through reason: Evaluating oral swelling in a patient with covid-19. Journal of General Internal Medicine. 2022;37(S507). <https://pesquisa.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/resource/pt/covidwho-1995871>
- Mota B, Martins A, Pereira-Nunes J, et al. A Severe Case of Post-COVID-19 Reactive Infectious Mucocutaneous Eruption in a Pediatric Patient. The Pediatric Infectious Disease Journal. 2022;42(2):e54-e55. doi:<https://doi.org/10.1097/inf.00000000000003760>
- Tillmann A, Burgin S. Reactive infectious mucocutaneous eruption in Adult. visualDx. Published February 15, 2022. <https://www.visualdx.com/visualdx/diagnosis/reactive+infectious+mucocutaneous+eruption?diagnosisId=56162&moduleId=101>
- Song A, Nicholson C, Maguiness S. Recurrent reactive infectious mucocutaneous eruption (RIME) in two adolescents triggered by several distinct pathogens including SARS-CoV-2 and influenza A. Pediatr Dermatol. 2021;38(5):1222-1225. doi:10.1111/pde.14780
- Pan CX, Hussain SH. Recurrent reactive infectious mucocutaneous eruption: A retrospective cohort study. Journal of the American Academy of Dermatology. 2023;89(2):361-364. doi:<https://doi.org/10.1016/j.jaad.2023.03.027>
- Wu D, Lee EY, Lifton J, et al. Severe recurrence of reactive infectious mucocutaneous eruption with extensive ocular involvement in an adult due to SARS-CoV-2. JAAD case reports. 2023;36:1-3. doi:<https://doi.org/10.1016/j.jdc.2022.12.026>
- Ryder CY, Pedersen EA, Mancuso JB. Reactive infectious mucocutaneous eruption secondary to SARS-CoV-2. JAAD Case Rep. 2021;18:103-105. doi:10.1016/j.jdc.2021.10.007
- Tonkin R, Ladha M, Johnson N, et al. Reactive infectious mucocutaneous eruption - repeat etanercept after intravenous immunoglobulin: A case report. SAGE Open Med Case Rep. 2022;10:2050313X221117887. Published 2022 Aug 17. doi:10.1177/2050313X221117887

Dr. James Burns talked to LSUSD Freshman Dental Class



Dr. James Burns talked to LSUSD Freshman Dental Class on the Importance of Organized Dentistry.