



A possible still role for colchicine in children with idiopathic recurrent acute pericarditis?

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Dear Editor,

Idiopathic recurrent acute pericarditis (IRAP) can occur in children, but the diagnosis of this condition may be particularly complex in a pediatric scenario, requiring a long-lasting period of observation, in which remission phases induced by non-standardized or empiric therapies are often unpredictable. Treatment of IRAP remains the most problematic challenge. Its overall prognosis is favorable in children, though IRAP may require frequent readmissions, and seriously affect the child's quality of life, especially when treated with corticosteroids. Prospective randomized trials to improve the recurrence rate of difficult-to-treat IRAP are actually unavailable in children.

As recurrent attacks of acute pericarditis observed in patients with familial Mediterranean fever can be brilliantly prevented by colchicine [1], a polycyclic alkaloid extracted from dried ripe seeds of the lily plant, it was proposed to use colchicine in patients with IRAP since 1987. The mode of action of colchicine, mostly used for the treatment of gout, is not fully understood, though many studies find that it inhibits pyrin-inflammasome and microtubule self-assembly during the mitotic spindle, subsequently affecting several functions of white blood cells, such as leukocyte diapedesis into the inflamed areas [2]. Colchicine is now recommended alone or in adjunct to nonsteroidal anti-inflammatory drugs

(NSAIDs) to increase remission rates and prevent recurrences of IRAP in adults [3].

The evidence about the use of colchicine in children with IRAP is sparse and contradictory: different reports find that colchicine is in some ways disappointing in terms of prevention of IRAP recurrences, warranting alternative treatments such as interleukin-1-targeted therapies, due to the fact that immunosuppressant or immunomodulating therapies or pericardiectomy are exceptionally chosen in children because of their unfavorable risk/benefit ratios [4].

The infrequent use of colchicine in children is not only explained by paucity and weakness of published pediatric studies, but also by a certain poor familiarity with colchicine and clinicians' hesitancy towards this ancient anti-gout drug. By contrast, before starting a biologic treatment, we should take into account that colchicine is cheap and largely effective in adults, in whom colchicine-induced prevention of IRAP has been reached with moderate-to-high rates of success [5]. We should also consider that colchicine has a low incidence of reversible side effects (diarrhea, myopathy, bone marrow suppression, hair loss) and that eventual relapses after discontinuation of colchicine are usually of milder intensity.

Based on these premises, a test with colchicine should also be attempted to evaluate its working effectiveness in adjunct to NSAIDs and corticosteroids in pediatric patients with a confirmed IRAP. When considering colchicine as a first- or second-line drug in children with IRAP, we should start with low dosages, in adjunct to NSAIDs, choosing fractioned doses (children over 5 years are usually treated with two daily doses) to increase its overall tolerability, which are gradually increasable in the absence of a clinical response. However, a clear-cut definition of colchicine efficacy and safety in pediatric IRAP might only derive from double-blind randomized controlled trials, though setting up

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multicenter prospective studies is very difficult due to both rarity and unpredictable protean course of IRAP in children.

Compliance with ethical standards

Conflict of interest The authors have no conflict of interest to declare.

Statement of human and animal rights This article does not contain any study with human and animals performed by any of the authors.

Informed consent None.

References

1. Rigante D, Cantarini L, Imazio M, Lucherini OM, Sacco E, Galeazzi M, Brizi MG, Brucato A (2011) Autoinflammatory diseases and cardiovascular manifestations. *Ann Med* 43:341–346
2. Rigante D, La Torraca I, Avallone L, Pugliese AL, Gaspari S, Stabile A (2006) The pharmacologic basis of treatment with colchicine in children with familial Mediterranean fever. *Eur Rev Med Pharmacol Sci* 10:173–178
3. Imazio M, Brucato A, Cemin R, Ferrua S, Belli R, Maestroni S, Trincherio R, Spodick DH, Adler Y, CORP (Colchicine for Recurrent Pericarditis) Investigators (2011) Colchicine for Recurrent Pericarditis (CORP): a randomized trial. *Ann Intern Med* 155:409–414
4. Brucato A, Emmi G, Cantarini L, Di Lenarda A, Gattorno M, Lopalco G, Marcolongo R, Imazio M, Martini A, Prisco D (2018) Management of idiopathic recurrent pericarditis in adults and in children: a role for IL-1 receptor antagonism. *Intern Emerg Med* 13:475–489
5. Adler Y, Charron P, Imazio M, Badano L, Barón-Esquivias G, Bogaert J, Brucato A, Gueret P, Klingel K, Lionis C, Maisch B, Mayosi B, Pavie A, Ristic AD, Sabaté Tenas M, Seferovic P, Swedberg K, Tomkowski W; ESC Scientific Document Group (2015) 2015 ESC Guidelines for the diagnosis and management of pericardial diseases: The Task Force for the Diagnosis and Management of Pericardial Diseases of the European Society of Cardiology (ESC) endorsed by the European Association for Cardio-Thoracic Surgery (EACTS). *Eur Heart J* 36:2921–2964