dated. We also did not explore potential administrative or logistic barriers that may hinder the follow-up of newborn infants. It may be useful to ensure that the entire health care staff provides consistent information at the time of discharge, preferably in writing.

In conclusion, our study found that the proportion of adherence with the current recommendation needs to improve and that parental satisfaction with having received detailed information from the paediatrician at the time of discharge is a strong determinant of adherence.

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Conflicts of interest

The authors have no conflicts of interest to declare.

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Usefulness of interleukin 1 receptor antagonist (anakinra) in refractory post-pericardiotomy syndrome☆

Utilidad del bloqueo de interleucina 1 con anakinra en el síndrome pospericardiotomía refractario

Dear Editor,

Postpericardiotomy syndrome (PPS) is an inflammation of the pericardium or pleura following a pericardial lesion, which may result from, among others, heart surgery, acute myocardial infarction or chest trauma. It is defined based on the presence of at least 2 of the following criteria: a) fever with no alternative explanation; b) pleuritic/pericardial chest pain; c) pericardial friction rub; d) pericardial effusion and e) pleural effusion with elevation of C-reactive protein.[1] It is considered persistent or refractory when the symptoms last longer than 4 weeks. The incidence of pericarditis post pericardiotomy is of 10%–25%.[2] Its development entails a prolonged stay, need of additional medication and the risk of recurrence and severe complications, such as cardiac tamponade.

This complication is treated with colchicine, nonsteroidal anti-inflammatory drugs and steroids, reserving intravenous immunoglobulin (IVIG) therapy for refractory cases. A growing body of evidence in patients with recurrent idiopathic pericarditis demonstrates the usefulness of anakinra, an antagonist of the receptor of interleukin-1β,[3–5] a proinflammatory cytokine involved in innate immunity. However, this drug has not been used for treatment of severe refractory PPS to date.

We present two cases of refractory postoperative PPS that required pericardiocentesis or drainage on account of the favourable outcomes associated with treatment with anakinra.

Patient 1: boy aged 9 years with congenitally corrected transposition of the great arteries and complete heart block. The patient underwent an initial surgery at age 4 years (pulmonary artery banding and epicardial pacing) and

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developed PPS, which was treated with 2 cycles of prednisone (2 mg/kg/day). At 8 years he underwent a second surgery (hemi-Mustard procedure, band removal, arterial switch and Glenn procedure), and once again developed PPS. The patient received ibuprofen and colchicine, and on day 20 required addition of prednisone (2 mg/kg/day). The effusion progressed, requiring performance of pericardiocentesis (day 35 post surgery) and leading to administration of IVIG (2 g/kg), with no improvement after 3 doses. On day 65 post surgery, anakinra was added, delivered by the subcutaneous route (100 mg/24 h = 2 mg/kg/day), which achieved a significant reduction in the effusion. Tapering off of anakinra started after 2 months of treatment, with addition of prednisone at a low dose (0.1 mg/kg/day). At 3 months, anakinra and prednisone were discontinued, followed by discontinuation of colchicine 4 months after. The patient has attended follow-up visits at regular intervals and has not experienced a recurrence in 3 years.

Patient 2: boy aged 10 years with severe mitral valve stenosis and mixed aortic valve disease (moderate aortic valve and subaortic stenosis and mild regurgitation). After cardiac surgery (mitral and aortic valvuloplasty, subaortic membrane resection), the patient developed bilateral pleural effusion and pericardial effusion, with a prolonged need of pleural drainage with removal of up to 1900 mL/day. He was treated with ibuprofen and colchicine. During the postoperative period, he developed severe mitral insufficiency due to a suture tear that required reintervention on day 22 post surgery. Due to the persistence of pleural and pericardial effusion, prednisone (2 mg/kg/day) and IVIG were added, which were not effective. Due to the lack of improvement, anakinra was initiated on day 37 post surgery, delivered subcutaneously at a dose of 100 mg per 24 h (4 mg/kg/day), which achieved resolution of pericardial effusion and a significant reduction of pleural effusion, allowing removal of the drains and hospital discharge. On month 3 post surgery, prednisone was discontinued and tapering of anakinra started, which was followed by an increase in the left-sided pleural effusion that required readmission to hospital. We increased the dose of anakinra (100 mg/12 h), which achieved a favourable response. At present (11 months post surgery) mild pleural effusion persists in the left hemithorax, and the patient remains in treatment with colchicine and low-dose prednisone, tolerating the tapering of anakinra without complications (current dose, 100 mg/72 h).

Both patients tolerated the drug well, as they only developed local reactions at the site of injection in the first doses.

Several hypotheses have been formulated to explain the pathogenesis of PPS, including a systemic inflammatory response triggered by exposure of pericardial/pleural structures to the immune system, the presence of blood in the pericardial–pleural space or perioperative tissue hypoxia. Tissue necrosis or mesothelial damage associated to traumatic injury or heart surgery may stimulate the release of autoantigens. Patients that develop PPS exhibit elevation of various cytokines, including interleukins 1, 8 and 6.[6] Since interleukin 1 plays a key role in the development of inflammation, blocking its activity could contribute to inhibiting the mechanisms involved in the pathogenesis of PPS.

Although anakinra has proven effective in the management of recurrent idiopathic pericarditis,[3–5] our literature search did not yield any studies that assessed its role in the management of severe refractory PPS.

In our experience, anakinra was effective and safe for treatment of patients with severe refractory PPS. In the future, performance of multicentre studies with larger samples will determine its efficacy for this indication.

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