Rituximab therapy for chronic periaortitis

Chronic periaortitis (CP) is a rare condition, hallmarked by periaortic fibro-inflammatory tissue which often causes ureteral obstruction, and encompasses idiopathic retroperitoneal fibrosis and inflammatory abdominal aortic aneurysm (IAAA). CP usually responds to glucocorticoids, but some patients may be steroid-refractory or not tolerate standard glucocorticoid doses. For such cases, valid therapeutic alternatives are lacking.\(^1\)\(^2\) Combinations of prednisone and immunosuppressants (eg, cyclophosphamide, mycophenolate mofetil) are not of proven superiority to prednisone alone, and their effectiveness in refractory CP is unknown.\(^3\)\(^4\) Because B cells abundantly infiltrate CP lesions,\(^5\) and CP is often associated with autoimmune diseases,\(^6\) we used rituximab in two patients with CP, one refractory to conventional treatments, and the other with contraindications to standard-dose glucocorticoids.

Our first patient, a 49-year-old woman, was hospitalised for malaise and back pain. Abdominal CT revealed a soft-tissue-density periaortic mass suggesting CP, a diagnosis confirmed by laparoscopic biopsy (figure 1). The patient responded to prednisone (initial dose, 1 mg/kg/day), with symptom remission and reduction in CP thickness, but relapsed with back pain and CP enlargement when the prednisone dose was 5 mg/day (6 months after treatment initiation). Further treatment with prednisone (initial dose 0.8 mg/kg/day) plus methotrexate (0.25 mg/week) for 11 months, and subsequently tamoxifen, failed to induce remission. At restaging 24 months after disease onset, erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) were 64 mm/h and 6 mg/l, respectively, antinuclear antibodies (ANAs) were 1/160, and IgG4 was 15 mg/dl (normal <135). Positron emission tomography (PET)/CT showed increased...

---

**Figure 1** Histopathological and immunohistochemical analysis of the retroperitoneal biopsy specimen in the first patient. (A) The retroperitoneal tissue specimen is characterised by a dense fibrous tissue with a mild-to-moderate amount of spindled fibroblasts/myofibroblasts and a chronic inflammatory component mainly made up of lymphocytes and plasma cells organised in diffuse (asterisk) and pseudo-follicular (arrow) patterns. The lymphocytic inflammatory infiltrate is composed of CD20 cells (B) that are predominantly situated in the pseudo-follicular aggregates, and CD3 lymphocytes (C) that are distributed both diffusely and within the aggregates. The CD3 lymphocytic subset is mainly composed of CD4+ elements (D), while CD8 cells (E) constitute only a minor fraction. (F) There is a mild infiltration of IgG4 plasma cells throughout the fibro-inflammatory proliferation. Staining: (A) H&E; (B–F) 3,3-diaminobenzidine-revealed immunohistochemistry mildly counterstained by Harris haematoxylin. Original magnification: ×10. Bar scale: 300 μm.
We have here described two patients with CP treated with rituximab; the first failed to respond to different therapies, while rituximab alone induced sustained disease remission. The second received rituximab plus low-dose prednisone because the response of the retroperitoneal mass to prednisone might have induced remission by itself, the dose we used is generally insufficient for CP. Importantly, rituximab was well tolerated and safe in both patients.

In a recent report, one patient with periarteritis secondary to IgG4-related systemic disease was successfully treated with rituximab, although the response of the retroperitoneal mass was not described. Rituximab is increasingly used in different autoimmune disorders such as rheumatoid arthritis, systemic lupus erythematosus and anti-neutrophil cytoplasmic antibody (ANCA)-associated vasculitides. CP is also thought to have an autoimmune background, given its association with autoimmune diseases and with the autoimmunity-predisposing HLA-DRB1*03 allele. The efficacy of rituximab also suggests a crucial pathogenetic role for B cells in CP. B cells are abundant in CP tissue, where they form the core of the inflammatory aggregates, but their mechanisms of action are still unclear.

In conclusion, rituximab may be effective in CP. Larger studies are warranted to better appreciate the efficacy and safety of this approach and to select candidate patients.

Figure 2 [18F]Fluorodeoxyglucose (FDG) positron emission tomography (PET)-CT evidence of response to rituximab in the first patient. (A), (B) and (C) respectively show CT, PET and PET-CT evidence of active chronic periaortitis. A periaortic cuff, recognisable in (A) (arrow), is the site of marked accumulation of [18F]FDG, as seen in (B) and (C) (arrows). (D–F) show the evolution of the disease 3 months after rituximab therapy: mass shrinkage (D, arrow) is accompanied by the almost complete disappearance of [18F]FDG uptake in the periaortic area (E and F, arrows).

REFERENCES

Competing interests None.
Provenance and peer review Not commissioned; externally peer reviewed.
Received 9 December 2011
Accepted 30 December 2011
Published Online First 14 May 2012
doi:10.1136/annrheumdis-2011-201166

Letters
Rituximab therapy for chronic periaortitis
Federica Maritati, Domenico Corradi, Annibale Versari, et al.

*Ann Rheum Dis* 2012 71: 1262-1264 originally published online May 14, 2012
doi: 10.1136/annrheumdis-2011-201166

Updated information and services can be found at:
http://ard.bmj.com/content/71/7/1262.full.html

**References**
This article cites 11 articles, 4 of which can be accessed free at:
http://ard.bmj.com/content/71/7/1262.full.html#ref-list-1

**Email alerting service**
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/