On ANCA-associated glomerulonephritis in the very elderly

To the Editor: I read with interest the article by Bomback *et al.*[1] regarding outcomes and morbidity in very elderly patients with pauci-immune vasculitis. A number of additional limitations were not eluded to in the accompanying editorial:[2] 18% of the 'treated' patients were given a nonstandard of care regimen of either steroids or mycophenolate mofetil alone, which would be expected to carry a lower side-effect burden than definitive treatment with cyclophosphamide. This may account for the surprisingly low frequency of infectious complications in the treated group.

Further, the severity of infectious complications was not graded, and other common side effects such as anemia were not reported, along with a lack of functional outcomes such as time in the hospital.

In making the decision to pursue aggressive treatment involvement of patients in a shared decision is crucial. It would be interesting to know whether certain patients had declined aggressive treatment. There is a lack of clarity regarding the comorbidities given that no functional data were recorded such as nursing home residence. Also, certain comorbidities, such as metastatic malignancy, would have carried much more weight, and the article does not delineate the comorbidities in the treated vs. untreated groups.

Other prognostically important information such as albumin at presentation is absent along with weight, thus we cannot adjust for peak creatinine levels reflecting healthy patients rather than more severe disease.

Overall, the study provides helpful support for clinicians initiating immunosuppressive treatment in elderly patients, but there is a wealth of further information, which needs to be clarified in the future.

1. Bomback AS, Appel GB, Radhakrishnan J *et al.* ANCA-associated glomerulonephritis in the very elderly. *Kidney Int* 2011; **79**: 757–764.
2. Hamour SM, Salama AD. ANCA comes of age—but with caveats. *Kidney Int* 2011; **79**: 699–701.

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The Authors Reply: We agree with many of the comments made by Dr Reschen[1] regarding our study on anti-neutrophil cytoplasmic antibody (ANCA)-associated glomerulonephritis (GN) in the very elderly.[2] As mentioned in our discussion, a retrospective cohort study such as ours is limited to objective data that can be drawn from patient charts. In creating our models to identify parameters at presentation that might influence outcomes, we focused on histopathological and clinical variables that were universally collected for all patients. Patients' functional and nutritional statuses are difficult to measure objectively and are inconsistently recorded, particularly when the diagnosis of pauci-immune GN is made by a consulting nephrologist meeting the patient for the first time.

Dr Reschen suggests that infectious complications in this cohort might be artificially low, as 18% of treated patients received steroids or mycophenolate mofetil as induction therapy. However, as we point out in our discussion, there has been a shift from oral toward intravenous cyclophosphamide since the time of this data collection, specifically to limit cumulative dose and adverse events.[3] Given that almost 60% of the treated patients in this cohort received at least 6 months of oral cyclophosphamide, we feel that our reported infectious rate of 38.3% is a reasonable, perhaps even mildly inflated, estimate of infectious risk for very elderly patients who today would most likely be treated with intravenous cyclophosphamide.

Although we agree with Dr Reschen that functional outcomes are important, these data were not available. Instead, we focused on dialysis-free survival in this cohort, where virtually all patients presented with severe renal failure, and nearly 70% of patients died or reached end-stage renal disease within 1 year. Despite the limitations, we feel that this assembled cohort provides an important source of support for nephrologists to utilize immunosuppression in very elderly patients with ANCA-associated disease. The general rules of treating with immunosuppressive agents—namely, to achieve the best possible results with the least possible toxicities—still hold and almost certainly do so with more urgency in this patient population.

1. Reschen ME. On ANCA-associated glomerulonephritis in the very elderly. *Kidney Int* 2011; **80**: 1107.
2. Bomback AS, Appel GB, Radhakrishnan J *et al.* ANCA-associated glomerulonephritis in the very elderly. *Kidney Int* 2011; **79**: 757–764.
3. de Groot K, Harper L, Jayne DR *et al.* Pulse versus daily oral cyclophosphamide for induction of remission in antineutrophil cytoplasmic antibody-associated vasculitis: a randomized trial. *Ann Intern Med* 2009; **150**: 670–680.

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