

References

1. Reshef A, Moldovan D, Obtulowicz K, Leibovich I, Mihaly E, Visscher S et al. Recombinant human C1 inhibitor for the prophylaxis of hereditary angioedema attacks: a pilot study. *Allergy* 2013;**68**:118–124.
2. Craig T, Riedl M, Dykewicz MS, Gower RG, Baker J, Edelman FJ et al. When is prophylaxis for hereditary angioedema necessary? *Ann Allergy Asthma Immunol* 2009;**102**:366–372.
3. Bowen T, Cicardi M, Farkas H, Bork K, Longhurst HJ, Zuraw B et al. 2010 international consensus algorithm for the diagnosis, therapy and management of hereditary angioedema. *Allergy Asthma Clin Immunol* 2010;**6**:24–37.
4. Cicardi M, Bork K, Caballero T, Craig T, Li HH, Longhurst H et al. Evidence-based recommendations for the therapeutic management of angioedema owing to hereditary C1 inhibitor deficiency: consensus report of an International Working Group. *Allergy* 2012;**67**:147–157.
5. Bork K, Hardt J. Hereditary angioedema: increased number of attacks after frequent treatments with C1 inhibitor concentrate. *Am J Medicine* 2009;**122**:780–783.
6. Plosker GL. Recombinant human C1 inhibitor (Conestat Alfa) in the treatment of angioedema attacks in hereditary angioedema. *Biodrugs* 2012;**26**:315–323.
7. Lumry WR, Castaldo AJ, Vernon MK, Blaustein MB, Wilson DA, Horn PT. The humanistic burden of hereditary angioedema: Impact on health-related quality of life, productivity, and depression. *Allergy Asthma Proc* 2010;**31**:407–414.

Increased mortality in AR patients?

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In their contribution to the April issue of *Allergy* titled ‘Allergic rhinitis and risk of erectile dysfunction – a nationwide population-based study’, Su et al. (1) described a case-control study which they have conducted in allergic rhinitis (AR) patients and matched controls not suffering from this disease.

It is one of the largest, well-designed clinical observation trials in the history of epidemiologic research dealing with allergic disorders, and the authors come up with the surprising finding that AR is a predisposing factor for erectile dysfunction (ED). The hazard ratio (HR) for the development of ED was 1.37 which is higher than, for example, the HR for asthma or COPD.

The most surprising finding, however, can be found in Fig. 1 of their publication:

In 60 421 AR patients followed up for a mean time of 5.79 years, 1621 deaths occurred compared with only 548 deaths in 61 828 controls without AR. The authors do not explain this finding nor do they mention this fact at all.

It appears more than astonishing that in this population with a mean age of 34.25 years, there are 1073 more deaths in AR patients than in completely matched controls. These data therefore seem to suggest a 197% increase (relative risk 2.97, 95% confidence interval 2.70–3.27) in mortality in AR

patients compared with matched controls (though we were not able to account for the matching in our analysis). One may only speculate about the reasons for this surplus mortality in young to mid-age allergic subjects: Could it be the adverse result of taking anti-ED medication? Did these patients die in accidents caused by sedative antiallergic medication or somnolence due to the disease as described before (2)? The authors should reanalyze their data in this light.

Author contributions

RM has written the manuscript; MH has conducted the analysis.

Conflict of interest

There is no conflict of interest with this topic.

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References

1. Su VYF, Liu CJ, Lan MY, Chen YM, Su KC, Lee YC et al. Allergic rhinitis and risk of erectile dysfunction – a nationwide population-based study. *Allergy* 2013;**68**:440–445.
2. Spaeth J, Klimek L, Mösges R. Sedation in allergic rhinitis is caused by the condition and not by antihistamine treatment. *Allergy* 1996;**51**:893–906.

REPLY

We thank Ralph and Martin for their letter regarding the statistically significant increase in mortality in allergic rhinitis (AR) in this study, a nationwide population-based cohort study (1). In this study, we demonstrate the role of AR in erectile dysfunction (ED) development by use of survival analysis, including the Kaplan–Meier method and Cox regression analysis. Despite possible differences in mortality, the subjects who expired would be censored in the survival analysis with our results unaffected. The subjects who expired during follow-up (2000–2009) accounted for a very small part of both cohorts (2.5% vs 0.9% in the AR and control groups, respectively). However, it seems to differ between groups. Cardiovascular mortality in the AR and control groups was 9.9% (161/1621) and 9.5% (52/548), respectively. Infection accounted for 22.4% (363/1621) of the AR group and 13.5% (74/548) of controls. According to the Taiwan government's report based on issued death certificates (2), the most common cause of death in such a young population (mean age 34 years) is accident, which is difficult to identify in this database via ICD-9 coding. Whether AR patients have a higher risk for mortality may be the next topic of interest. Nonetheless, we should emphasize again that, as

an observational study, the results should be treated circumspectly.

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References

1. Su VYF, Liu CJ, Lan MY, Chen YM, Su KC, Lee YC et al. Allergic rhinitis and risk of erectile dysfunction – a nationwide population-based study. *Allergy* 2013;**68**:440–445.
2. Department of Health, Executive Yuan, R.O.C (TAIWAN). <http://www.mohw.gov.tw/cht/DOS/DisplayStatisticFile.aspx?d=13718&s=1>.