

## RESEARCH LETTER

**Rescription After Adverse Drug Reaction in the Elderly: A Descriptive Study**

**A**dverse drug reactions (ADRs) frequently occur in hospitalized elderly patients.<sup>1</sup> In geriatric medicine it is common practice to evaluate pharmacotherapy during hospitalization, often leading to interventions in general and interventions related to ADRs in specific. After discharge, the general practitioner (GP) takes over responsibility for the pharmacotherapeutic management of the patient. This requires adequate transfer of information to primary care about these interventions and the reasons for it. The objective of this study was to measure the rate of rescription of drug therapies discontinued because of an ADR.

**Methods.** We studied consecutively hospitalized patients on geriatric wards of the University Medical Center in Utrecht (n=105) and of the Tweesteden teaching hospital in Tilburg (n=110), the Netherlands. Their mean age was 82 years (range, 59-96 years), and 67% were female.

Adverse drug reactions identified by the attending physician were extracted from medical files by 2 of the investigators (C.M.J.v.d.L. and M.C.H.K.).

Causality of ADRs was classified as definite, probable, possible, or unlikely using the algorithm of Kramer et al.<sup>2</sup> Adverse drug reactions classified as unlikely were excluded from this study. Adverse drug reactions were classified as serious if resulting in death or life-threatening events, requiring inpatient hospitalization or prolongation of existing hospitalization or resulting in persistent or significant disability.<sup>3</sup>

For each ADR, we studied whether it was mentioned in the discharge letter to the GP and whether the GP had incorporated the provided information on ADRs in his or her own patient files. For those drugs that had been withdrawn during hospitalization because of an ADR, we studied the rescription rate during 6 months following hospitalization. Information on rescription was obtained from the patients' community pharmacies.

**Table. Rescription Rate of Drug Regimens Stopped During Hospitalization Because of an ADR Within 6 Months After Discharge**

Variable	Rescription Rate, % (No./Total No.)
Overall	27 (17/64)
Serious ADRs	22 (8/36)
Nonserious ADRs	32 (9/28)
ADRs mentioned in discharge letter	30 (11/37)
ADRs not mentioned in discharge letter	22 (6/27)

Abbreviation: ADR, adverse drug reaction.

**Results.** In 69 (32%) of 215 patients, 104 ADRs of at least possible causality were recorded. Forty ADRs (38%) were classified as serious. Of the 104 ADRs and the 40 serious ADRs, 53 (51%) and 25 (62%), respectively, were mentioned in the discharge letter to the GP.

Rescription rate could not be studied for 18 patients because they died during hospital stay or within 6 months after discharge. To our knowledge, no probable relation between ADRs and cause of death was present in these patients. In the remaining 51 patients with 77 ADRs, the medication that caused an ADR was withdrawn 64 times. For these drugs the rescription rate was 27% (17/64) (**Table**). Rescription rate was not markedly different for serious or nonserious ADRs or for ADRs mentioned or not mentioned in the discharge letter.

General practitioners incorporated information on ADRs in their own patient files in 8 (22%) of the 37 ADRs mentioned in the discharge letter. This was not done in a standardized way, except for 3 patients for whom it was documented in a special part of the patient record, for example, the allergy section. None of the pharmacies was aware of any ADRs that occurred.

**Comment.** Approximately a quarter (27%) of the drug treatments withdrawn during hospitalization because of an ADR were rescribed within 6 months after discharge, irrespective of the seriousness of the ADR. In addition, transfer of information to GPs and documentation by GPs were poor. A limitation of the present study is the lack of information about the reasons to rescribe discontinued medication, so we do not know whether rescription was contraindicated in all cases. Furthermore, we could not find information on recurrence of ADRs after rescription in most cases, partly because of the retrospective character of this study. The small number of studied objects is another limitation of our study. Larger prospective studies should be carried out to confirm our preliminary results. We are not aware of literature providing data on rescription of drug therapies discontinued because of an ADR. One study showed that the transfer of information on drugs to primary care was limited.<sup>4</sup> In a new and growing model of inpatient care in the United States, a hospitalist becomes the patient's attending physician during hospitalization and the outpatient physician resumes supervision of the patient after discharge.<sup>5</sup> The loss of information on ADRs by poor communication between hospitals and primary care, as described in our study, may therefore be an emerging risk in the United States. We suggest that better communication on ADRs between different health care echelons may reduce unnecessary rescription and thereby reduce the occurrence of ADRs. A national electronic medication file, as in development in the Netherlands, may improve medication surveillance.

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## COMMENTS & OPINIONS

### Erectile Dysfunction

We read the article by Saigal et al<sup>1</sup> with interest. The authors found a difference in the prevalence of erectile dysfunction (ED) in Hispanic men compared with whites and in the elderly population. We believe that the methods used by the authors may overestimate the prevalence of ED. Erectile dysfunction was assumed to be present if answers to the question "How would you describe your ability to get and keep an erection adequate for satisfactory intercourse?" were "sometimes able" and "never able."<sup>1(p208)</sup>

A retrospective analysis of 70 patients referred by their primary physicians to a sexual function clinic for ED was carried out at our hospital. Erectile dysfunction was defined as the inability to achieve and maintain an erection satisfactory for intercourse. Although most of the subjects had a referral criteria satisfying the definition of ED, on detailed questioning, the proportion of the subjects had other psychosomatic reasons, for example, painful penis, abnormal penile curvature, and premature ejaculation. The prevalence of ED was significantly higher for those older than 50 years (75% vs 25%;  $P=.005$ ). Despite that, all patients were referred to a specialist clinic with an "acceptable ED definition," 37% did not have ED. While using the same definition of ED as we did, Saigal et al<sup>1</sup> found a prevalence of ED of 18%. We believe that this could be only 6% because a third of the patients did not have ED on subsequent examination in our study. We appreciate that the authors used the questions recommended by National Institutes of Health Development Panel,<sup>2</sup> but using the same tool in our small-scale

study did not appear to show the same effects as demonstrated by Saigal et al.<sup>1</sup>

We found similar data as Saigal et al<sup>1</sup> in a univariate analysis; age ( $P=.04$ ) and ischemic heart disease ( $P=.02$ ) were associated with ED, but the effects of confounding factors on multivariate analysis showed that age was independently associated with ED (odds ratio, 1.1 [95% confidence interval, 1.01-1.10];  $P=.01$ ), while stroke showed a trend toward an association with ED (odds ratio, 10.9 [95% confidence interval, 0.74-159.6];  $P=.08$ ).

Saigal et al<sup>1</sup> found that ethnicity was associated with ED, especially in Hispanic men. The data from Perez et al<sup>2</sup> demonstrated an association of nonwhite racial status with a negative interest in the evaluation of a sexual problem.<sup>3</sup> Our data comparing Asian and white men showed that ethnicity was not correlated with ED ( $P=.50$ ), though the number was small.

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### In reply

One of our primary goals was to use a nationally representative sample (comprising 3566 men) to define the national prevalence of ED, regardless of the cause of ED or whether men had sought medical care for the condition. Shah and Lo describe underlying causes for ED found in a small number of patients who stated that they had ED and were referred for care to a specialty clinic. They further classify this population using an unstated, physician-created definition of ED. We strongly oppose an attempt to draw inferences from their data and make conclusions using ours. Not only do the significant conceptual differences between a population-based sample and a tertiary referral sample preclude meaningful comparisons between these 2 populations but also, the complex behavioral, psychological, and physiological components of a condition like ED demand a patient-centered definition such as the one used in our study.<sup>1</sup>

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