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Case report

Difficulty in managing polypharmacy in the elderly: Case report and review of the literature

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ABSTRACT

Elderly patients with multiple comorbidities are at risk of experiencing adverse drug events. We report a case of skin lesion related to drugs and discuss consequences of polypharmacy in the elderly. An 85-year-old female took the following drugs for a long time: amlodipine, valsartan, hydrochlorothiazide, lysine acetylsalicylate, sinvastatine, and trimetazidine. In June 2013, she presented thoracic pain and received propranolol, tramadol, and paracetamol. One week later, she developed a diffuse skin lesion. In our patient, drugs considered unnecessary were discontinued and corticosteroid was administered orally. Careful monitoring helped improve the outcome. Corticoids were dangerous but necessary to correct the consequence of iatrogeny.

1. Introduction

The frequency of chronic illness and the expenditure for medications increase with older age.[1] Polypharmacy and prescription practices result in increased impairment in quality of life and in drug-related morbidity and mortality.[2] Nearly 50% of older adults take one or more medications that are not medically necessary.[3] Polypharmacy is variously defined as a large number of medications (> 5–10), use of more drugs than clinically indicated, or use of inappropriate medications.[4] A literature review found that polypharmacy continues to increase.[5,6] Based on polypharmacy and age-related pharmacokinetic and pharmacodynamic changes, the risks of adverse drug reaction and adverse drug event are increasing in elderly patients.[7–10] In fact, it is estimated that elderly people have four times greater odds of being hospitalized for adverse drug reactions than those < 65 years of age (16.6% vs. 4.1%).[11]

This report describes a case of vesiculobullous disease in the elderly associated with the administration of multiple drugs and, using this example, discusses the consequences of polypharmacy in the elderly.[12–20]

2. Case report

An 85-year-old female, having like antecedents of obesity, and since 2002 had a cerebral ischemic stroke with physical disability, an ischemic heart disease, and high blood pressure. Since November 2012, she has taken a compact tablet of two compounds at home (amlodipine and valsartan 5 mg/160 mg), hydrochlorothiazide 25 mg, lysine acetylsalicylate 160 mg, sinvastatine 20 mg, and trimetazidine 35 mg In June 2013, she presented with thoracic pain and also took propranolol 40 mg and a compact tablet of two compounds—tramadol with paracetamol 37.5 mg/325 mg. One week later, she developed a diffuse vesicobullous disease associated with significant pruritus, evolving in a context of conservation of the general condition. Physical examination revealed large tense blisters arising on normal skin. Several vesiculobullous lesions of different age and were most common in the lower abdomen, arms, and legs. The bullae were filled with clear fluid, and some were hemorrhagic. Examination of the healthy skin showed no peeling.

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The mucous were respected (Figs. 1 and 2). Biological investigations demonstrated the following: total leucocyte count, 10,800/mm^3; eosinophils, 108/mm^3; hemoglobin, 10.9 g/dL; and platelets, 386,000/mm^3. The C-reactive protein was 20 mg/L. Transaminase Serum Glutamate Oxaloacetate Transaminase (SGOT) was 16 IU/L, Serum Glutamate Pyruvate Transaminase (SGPT) 30 IU/L, urea 0.56 g/L, creatinine 13.23 mg/L, and blood glucose level 0.84 g/L. The search of antibodies antibasement membrane by indirect immunofluorescence was positive. Skin biopsy was not performed. The newly prescribed diuretic and drugs were discontinued. After ruling out a possible infection, we prescribed to our patient oral administration of 1 mg/kg of corticosteroid, local corticosteroid, an antihistaminic drug, iron for a long time, and local fusidic acid for a period of 15 days. The patient had a shower daily with an antiseptic. She received a low-salt diet enriched with potassium, vitamins, nutrients, and liquid contents. She has been assisted at home by her daughter and an assistant nurse. Evolution of symptoms was marked during the 1st month by relapses of lesions of different ages. During the 2nd month, relapses became less frequent, and the disease stabilized 3 months later. At the end of the 4th month and after the healing of lesions, the dosage of orally administered corticosteroid was reduced gradually. Unfortunately, the patient developed recurrent blistering, and the full dose of 1 mg/kg of oral corticosteroid was readministered. Each time we tried to decrease the dose of corticosteroid to below 0.5 mg/kg, she presented new vesicobullous lesions. Seven months later, the patient was stabilized by 0.5 mg/kg of oral corticosteroid (Figs. 3 and 4).

Electrolytes and blood glucose level remained normal. However, the patient presented high blood pressure, acute bronchitis, and epigastric pain. Her electrocardiogram had not changed; therefore, she was again prescribed diuretic hydrochlorothiazide 25 mg, transdermal glyceryl trinitrate, preventive anticoagulants enoxaparin sodium 40 mg/0.4 mL, amoxicillin clavulanic acid 2 g, and omeprazole 20 mg.

Fig. 1. Vesicobullous disease. Large tense blisters arising on normal skin in the right leg of the patient. These lesions were of different ages. The bullae were filled with clear fluid; some were hemorrhagic.

Fig. 2. Vesicobullous disease. Large tense blisters arising on normal skin in the lower abdomen of the patient. The bullae were hemorrhagic.

Sinvastatine 20 mg, trimetazidine 35 mg, antihistamic, and iron were discontinued. Unfortunately, 2 days later, she presented the same diffuse vesiculobullous disease again, so the full dose of 1 mg/kg of oral corticosteroid was readministered and hydrochlorothiazide was discontinued. High blood pressure was treated using a compact tablet of two compounds (amlodipine and valsartan 10 mg/160 mg), a long-term low-salt diet, and transdermal glyceryl trinitrate for 1 month. Preventive anticoagulants, such as enoxaparin sodium 40 mg/0.4 mL, amoxicillin clavulanic acid 2 g, and omeprazole 20 mg, were prescribed for a period of 10 days. After suspending hydrochlorothiazide and increasing the dose of corticosteroid, the skin eruption improved gradually; hence, oral administration of corticosteroid was reduced slowly. About 10 months later, our patient received only 20 mg of corticosteroid and she has not presented any vesiculobullous disease since. Her blood pressure is also stabilized.

3. Discussion

Most elderly patients with comorbidities and polymedication are excluded from clinical trials, and geriatrics was not considered a priority during medical training.[21] Now, geriatric pharmacotherapy represents one of the biggest achievements of modern medical interventions.[22] However, geriatric pharmacotherapy is a complex process that encompasses not only drug prescribing, but also age-appropriate drug development and manufacturing, appropriate drug testing in clinical trials, rational and safe prescribing, and reliable administration and assessment of drug effects, including adherence measurement and age-appropriate outcome monitoring.[22] To be able to improve outpatient health care management for patients receiving multiple medications, the current status quo of care, risk factors for deficient treatment, and characteristics of concerned patients must be investigated.[21] Although drug prescribing is often beneficial to patients, elderly patients are particularly exposed to the side effects of medications and their consequences.[1]

Bullous-liked drug eruption is common.[12,13,16,17,19,20] In our patient, the possibility of a drug-induced disease was considered because she was taking nine different medications. The diagnosis of a drug-induced disease was based on clinical, anamnesic, and biological arguments. The pharmacovigilance center realized a study of accountability, and the chronological analysis of events