Angiotensin Converting Enzyme Inhibitors and Sartans in a Geriatric Setting: Impact of Therapeutic Interchange

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Abstract

Background: Therapeutic interchange is widely used in geriatric settings, such as angiotensin enzyme converting inhibitors and angiotensin II receptor antagonists and angiotensin receptor blockers (sartans).

Objective: We evaluate the clinical impact (efficacy and tolerance) of a therapeutic interchange program for non-complicated hypertension.

Method: 13 patients receiving angiotensin enzyme converting inhibitors and 7 patients under sartans were followed up during 6 months after a therapeutic interchange to a first line drug: Ramipril and valsartan, respectively.

Results: All the substitutions were well tolerated and no significant difference was observed for diastolic and systolic pressure after therapeutic interchange.

Conclusion: Therapeutic interchange on angiotensin enzyme converting inhibitors and sartans in the context of hypertension seem safe based on our clinical data.

Keywords: Therapeutic interchange; Angiotensin enzyme converting inhibitors; Angiotensin II receptor antagonists and angiotensin receptor blockers (sartans); Geriatric setting

Introduction

Substitution treatment or “therapeutic interchange” (TI) is one of the most important tasks of the hospital pharmacist. It consists of converting, if possible, the patient’s prescription to treatments referenced in the new clinical setting [1]. This important pharmacoeconomic practice [2] must ensure clinical efficacy and safety of the new treatment and must be based on scientific data [3]. Therapeutic interchange is widely used in hospitals around the world, and this practice has developed even more since the exponential development of “me-too” drugs in many pharmacologic classes [2]. In France, especially in small geriatric hospitals, automatic TI for proton-pump inhibitors, statins or cardiovascular treatments are often done when the patient is admitted in the new clinical setting. These practices also seem safe since the patient will stay in the geriatric clinic for the rest of his life and will not be confronted to another substitution of his treatment.

The programs of automatic TI are often described as cost savings solutions and useful inventory stocking issues or processing time [4], but they could also have thought to be safe by optimizing prescriber’s knowledges about a limited number of drugs for current and non-complicated clinical situations and in turn a potential key for limiting medication errors.

Substitution of cardiovascular treatment is often difficult to implement in hospital settings [5,6]. However, if caution appears legitimate for certain therapeutic classes such as beta-blockers, other classes such as angiotensin enzyme converting (AEC) inhibitors or sartans (also called Angiotensin II receptor antagonists and angiotensin receptor blockers (ARBs) are pharmacologically homogeneous groups and how different molecules are potential substitutable [4,7,8]. This approach could appear particularly safe if this substitution is offered to patients in the long term, like in geriatric care.

We report data on the impact of substitutions of AEC inhibitors and ARBs. We present the cardiovascular monitoring of 15 patients receiving ACE inhibitors and 9 patients receiving ARBs who had their previous therapy substituted respectively with ramipril and valsartan, dosage adjustments.

Materials and Methods

Substitution was proposed to our patients in an interview with the patient's physician. This procedure was applied in cases of hypertension without gravity problems. A comparison of diastolic arterial pressure (DAP) and systolic (SAP) was carried out before and 6 months after the date of the substitution (comparisons by Student’s t test on paired measurements), dosage changes and major cardiovascular events (stroke, myocardial infarction and vascular death) were also identified.
Results

The substitution of the prior to AEC inhibitor to ramipril did not significantly alter the DAP (p=0.92, t=0.11) and SAP (p=0.94, t=0.76). Similarly, the substitution of the prior ARB to valsartan did not significantly alter the DAP (p=0.47, t=0.75) and SAP (p=0.13, t=1.68). See these results in Figures 1 and 2.

Discussion

Finally, no cardiovascular event was observed within 6 months following the substitution. After 6 months, 13 patients receiving ACE inhibitors and 7 patients under ARBs conserved the dose originally prescribed. Two patients receiving ACE inhibitors and one under sartan changed to an increased dosage of Ramipril and valsartan compared to the initial doses prescribed; in these cases, arterial pressure was stable after one month of treatment change. Finally, a patient who took sartan changed to reduced doses of this treatment.

References


