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## POSTER ABSTRACT

# A Patient-Centered Prescription Model assessing the appropriateness of chronic drug therapy in older patients.

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**Introduction:** Drug therapy in older patients is becoming a worldwide concern due to the progressive increase in the number of drug prescriptions and the difficulties in ensuring appropriate prescribing. Appropriate prescribing in these patients is a complex problem that cannot be solved by simply applying clinical practice guidelines (CPG).

Patients with multimorbidity usually show an evolution towards a progressive clinical, functional or cognitive impairment, which, in most cases, results in a limited life prognosis. In this scenario, drug therapy, which could have been appropriate in the past, can eventually become inappropriate as a disease progresses.

Frail older patients are more sensitive to inappropriate prescribing (IP), as they suffer a reduction in their ability to tolerate medications due to changes in pharmacokinetics and pharmacodynamics.

Consensus on the best procedure to optimize prescribing has not yet been established. In this context, we propose the use of a model which combines both the clinical judgment and the scientific evidence in a pragmatic and systematic approach.

The main objective of this model is to identify potentially IP in a group of older patients and to optimize them according to care goals of each patient. Care goals are established through the application of the Patient-Centered Prescription Model, which is based on a shared decision-making process including patient, physicians and a clinical pharmacist.

**Description of practice:** Each patient's pharmacotherapeutic plan is assessed through application of the Patient-Centered Prescription Model[1,2]. In brief, this is a systematic three-step process carried out by a multidisciplinary team made up of geriatricians and a clinical pharmacist:

Step 1 - Patient Centered Evaluation

The main objective of this step is to determine the global care goal of each patient: survival, improving or maintaining function or symptomatic control[3]. A holistic review of the patient, by means of a Comprehensive geriatric assessment, determines his care goal.

Professionals and patients establish a cooperative process to identify needs and agree on objectives[4]. This first evaluation sets the stage for the second and third steps.

#### Step 2 - Diagnosis Centered Evaluation:

Health problems of the patient along with the drugs prescribed for each diagnosis are listed. Drug purpose should fit with the main care goal previously agreed upon with the patient. Special attention is paid to prevalent disease states (Diabetes Mellitus (DM2)[5], arterial hypertension[6], dyslipidemia[7], Pain[8][9] and end of life situation[3,10]).

#### Step 3 - Medication centered assessment:

Based on the goals of care derived from step 1, the purpose of step 3 is to assess the indication of high risk medications (NSAID, antiplatelets, anticoagulants, hypoglycemics, insulin, digoxin and opioids[11]) or high risk combinations (risk of drug-drug or drug-disease interactions)[12]

#### Proposed therapeutic plan:

At the end of the process, as an integrated care approach, an individualized treatment plan is sent (or discussed by phone) for review and agreement with primary care.

**Key findings:** These are the results of three descriptive observational studies of patients admitted to an Acute Care Elderly (ACE) Unit, in three periods from 2012 to 2015.

382 patients were included. Average age of 86.7 years. 40% of all patients met the criteria for advanced chronic conditions (ACC).

At admission, median of medications per patient was 7, no differences between patients with ACC and the rest.

80% of patients met the definition for polypharmacy, no significance with patients with ACC.

33% of patients with ACC took 10 or more medications. 20% of total of patients had 2 or more iatrogenic medications prescribed, no differences between patients with ACC and the rest.

Overall, almost 40% of patients presented with an indication of at least one IP. Patients with ACC were significantly more likely to have IP (47.2% versus 34.7%) ( $p < 0.05$ ).

During admission, drug therapy regimens were modified in 93.44% of cases with IP. Prevalence of polypharmacy decreased significantly and, the prevalence of patients with ACC with 10 or more medications decreased to a half ( $p < 0.05$ ).

Analyzing patients with advanced dementia, 24.80% of their medications were for prevention, of which 76.2% were for primary prevention. At discharge, two-thirds (66.85%) of them were discontinued.

**Highlights:** The proposed methodology represents an initial approach encompassing evidence from multiple fields on the appropriateness of prescribing in the elderly and facilitating

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application of evidence in the routine clinical setting. Patient is the center of attention and he is an active member in the decision-making process.

**Conclusions:** Patients with advanced chronic conditions do not have a prescription according to their needs.

The Patient-Centered Prescription Model is a framework that helps minimize IP in a high-risk group older patients through a suitable approach to individualize a pharmacotherapeutic plan. It is applicable in other healthcare settings, such as nursing-homes or community care.

### References:

1. Molist Brunet N, Sevilla-Sánchez D, Amblàs Novellas J, Codina Jané C, Gómez-Batiste X, McIntosh J, et al. Optimizing drug therapy in patients with advanced dementia: A patient-centered approach. *Eur. Geriatr. Med.* 2014;5:66–71.
2. Molist Brunet N, Espauella Panicot J, Sevilla Sánchez D, Amblàs Novellas J, Codina Jané C, Jacint A, et al. A patient-centered prescription model assessing the appropriateness of chronic drug therapy in older patients at the end of life. *Eur. Geriatr. Med.* 2015;3–7.
3. O'Mahony D, O'Connor MN. Pharmacotherapy at the end-of-life. *Age Ageing.* 2011;40:419–22.
4. Coulter A, Collins A (2011). Making shared decision-Making a reality. No decision about me, without me. The Kings Fund. (acc. 15 Apr 2015) Available at: [http://www.kingsfund.org.uk/sites/files/kf/Making-shared-decision-making-a-reality-paper-Angela-Coulter-Alf-Collins-July-2011\\_0.pdf](http://www.kingsfund.org.uk/sites/files/kf/Making-shared-decision-making-a-reality-paper-Angela-Coulter-Alf-Collins-July-2011_0.pdf)
5. Sue Kirkman M, Briscoe VJ, Clark N, Florez H, Haas L, Halter J, et al. Diabetes in older adults: a consensus report. *J. Am. Geriatr. Soc.* 2012;60:2342–56.
6. Goeres LM, Williams CD, Eckstrom E, Lee DSH. Pharmacotherapy for hypertension in older adults: a systematic review. *Drugs Aging.* 2014;31:897–910.
7. Petersen LK, Christensen K, Kragstrup J. Lipid-lowering treatment to the end? A review of observational studies and RCTs on cholesterol and mortality in 80+ -year olds. *Age Ageing.* 2010;39:674–80.
8. Abdulla A, Adams N, Bone M et al. Guidance on the management of pain in older people. *Age Ageing.* 2013;42 Suppl 1:1–57.
9. Articles S. American Geriatrics Society updated Beers Criteria for potentially inappropriate medication use in older adults. *J. Am. Geriatr. Soc.* 2012;60:616–31.
10. Cruz-Jentoft AJ, Boland B, Rexach L. Drug therapy optimization at the end of life. *Drugs and Aging.* 2012;29(8):511–21.
11. Budnitz DS, Lovegrove MC, Shehab N, Richards CL et al. Emergency hospitalizations for adverse drug events in older Americans. *N. Engl. J. Med.* 2011;365:2002–12.
12. The Model of Care Polypharmacy Working Group. Polypharmacy Guidance 2012. NHS Scotland. 2013.

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**Keywords:** patient-centered care; inappropriate prescribing

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