



ORIGINAL ARTICLE

Trends in gastrointestinal bleeding in the Region of Valencia (2000-2005). Relationship to sales of nonsteroidal anti-inflammatory drugs and acid suppression medication

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KEYWORDS

Gastrointestinal bleeding;
Nonsteroidal anti-inflammatory drugs;
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Time series;
Ecological study

Abstract

Objective: To describe 2000-2005 time trends of prescription for NSAIDs, proton pump inhibitors (PPIs) and hospital admissions for gastrointestinal (GI) bleeding.

Methods: Time series analysis of gastrointestinal (GI) bleeding admission and drugs' Defined Daily Dose per 1000 people per day (DDD/1000/day) in the Region of Valencia, Spain, from January 2000 to December 2005.

Results: Dispensation of NSAIDs went from 42.7 DDD/1000 people/day in 2000 to 58.3 DDD/1000 people/day in 2005. During the same period, dispensation of PPIs went from 26.3 DDD/1000 people/day to 68.5 DDD/1000 people/day (both are statistically significant). The rate of hospitalisations for gastrointestinal bleeding during this period oscillated between 142 and 126 admission per 100 000 inhabitants/year. No year showed significant differences compared to 2000.

Conclusion: A substantial increase in the NSAID use from 2000 to 2005 was not accompanied by changes in GI bleeding hospitalisation rates in Valencia, but GI bleeding rates continued to be high, suggesting a need to improve NSAIDs use.

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PALABRAS CLAVE

Hemorragia gastrointestinal;
Antiinflamatorios no esteroideos;
Bomba de protones;
Serie cronológica;
Estudio ecológico;

Tendencias en la hemorragia gastrointestinal en la Comunidad Valenciana (2000-2005). Relación con la venta de antiinflamatorios no esteroideos y supresores de ácido

Resumen

Objetivo: Describir las tendencias temporales durante el periodo 2000-2005 de la prescripción de AINE, inhibidores de la bomba de protones (IBP) y los ingresos hospitalarios por hemorragia gastrointestinal (GI).

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Métodos: Análisis de series cronológicas de ingresos por hemorragia GI y de las dosis diarias definidas (DDD) de medicamento por cada 1.000 personas y día (DDD/1.000/día) en la Comunidad Valenciana desde enero de 2000 hasta diciembre de 2005.

Resultados: La dispensación de AINE ha aumentado desde 42,7 DDD/1.000/día en 2000 a 58,3 DDD/1.000/día, y la de IBP pasó de 26,3 DDD/1.000/día a 68,5 DDD/1000/día (ambos son cambios estadísticamente significativos). La tasa de ingresos por hemorragias GI durante este periodo pasó de 142 a 126 por cada 100.000 habitantes/año. En relación a 2000, ninguno de los años analizados muestra diferencias significativas.

Conclusiones: El aumento sustancial del uso de AINEs entre 2000 y 2005 no se vio acompañado de cambios en la tasa de ingresos hospitalarios en Valencia, pero la tasa de hemorragias GI siguieron siendo altas, lo que sugiere que es necesario mejorar la utilización de los AINE.

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Introduction

The last few decades have seen a decline in the global prevalence of uncomplicated ulcer disease, expressed in a drop in hospital admissions, surgery and specific mortality.¹⁻⁴ This decline is attributed to the decreasing prevalence of *Helicobacter pylori* infection and the widespread use of acid suppressant drugs, particularly proton pump inhibitors (PPIs).⁵ In contrast to this general trend, there has been a simultaneous rise in hospitalisations for perforated ulcer and acute gastrointestinal (GI) bleeding, particularly in the elderly and in women, although these trends vary from country to country.^{5,6} The increase in these problems is attributed to a longer life expectancy, the aging of the population and the consequent increase in the prevalence of cardiovascular and rheumatic diseases treated with acetylsalicylic acid and other anti-platelet agents, anticoagulants and non-steroidal anti-inflammatory drugs (NSAIDs). Other drugs, such as the selective serotonin reuptake inhibitors (SSRI), whose use is becoming more popular, have also been linked to GI bleeding.^{7,8}

In the last few years, there has been an interesting discussion about the greater or lesser gastric tolerance to the different therapeutic classes of NSAIDs. Of particular concern are the COXIBs, whose role has been widely debated, because the initial rapid rise in their use has led to a jump in the total volume of people treated with NSAIDs (both selective and non-selective) and some ecological studies suggest that this increase may be linked to a rise in the rate of GI bleeding.⁹⁻¹¹ In Spain, various measures have contributed to a decrease in the use of COXIBs and to limiting prescriptions of selective NSAIDs until the announcement of the withdrawal of rofecoxib. These include the significant impact of a safety warning issued by the Spanish Agency for Drugs and Medical Products (September, 2001) alerting to the cardiovascular risks of COXIBs,^{12,13} the implementation in 2002 of a prior authorisation requirement before their dispensation^{12,13} and various interventions by the Regional Health Care Departments, including the implementation of economic incentives to Primary Care physicians that penalised the prescription of COXIBs.¹⁴ Nonetheless, in spite of this limit on consumption of COXIBs, the use of NSAIDs overall has continued to grow over the last few

years, propelled above all by propionic acid derivatives, which have been evaluated positively in Spanish pharmaceutical indicators associated with economic incentives.¹⁴ It is possible that the global increase in the use of both selective and non-selective NSAIDs has been accompanied by an increase in the incidence of complications of peptic disease and, particularly, of GI bleeding.

The aim of this study was to describe time trends in the prescription of NSAIDs and PPIs, and the incidence of hospital admissions for GI bleeding from January 2000 to December 2005 in the Region of Valencia (Spain) and to use ecological analysis to study possible associations between these phenomena.

Material and methods

Design

A time series analysis to examine trends in hospitalisation for GI bleeding and the dispensation of NSAIDs and PPIs in a Spanish region from January 2000 to December 2005.

Setting

The study was conducted in the Region of Valencia, with a population of 4 120 729 in December 2000, and of 4 692 449 at the end of the study period, December 2005. The Valencia Health Agency (VHA) is a public health care organisation administered by the Government of Valencia that provides free primary and hospital health care to all the inhabitants of Valencia. The VHA manages its own network of 23 acute general hospitals, including several university hospitals, with more than 9400 hospital beds (84% of the hospital beds in the Valencia) and deals with about 78% of Valencia's hospital discharges. Patients, as in the rest of the Spanish National Health System, receive broad pharmaceutical benefits: medicines are free of charge for retired and disabled people, victims of occupational accidents and diseases and in-hospital patients. The other patients pay 40% of the price of prescription drugs, although for chronic diseases they only pay 10%, with a limit of €2.45 (1 Euro ≈ 1.40 U.S. dollar).

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