Società Medico Chirurgica di Ferrara


REMEDICONTO
DELLE ADUNANZE
MEDICO-CHIRURGICA
DI FERRARA

APPROPRIATEZZA DELL'USO DEGLI INIBITORI DI POMPA PROTONICA E H2-INIBITORI

Sabato 7 maggio 2011

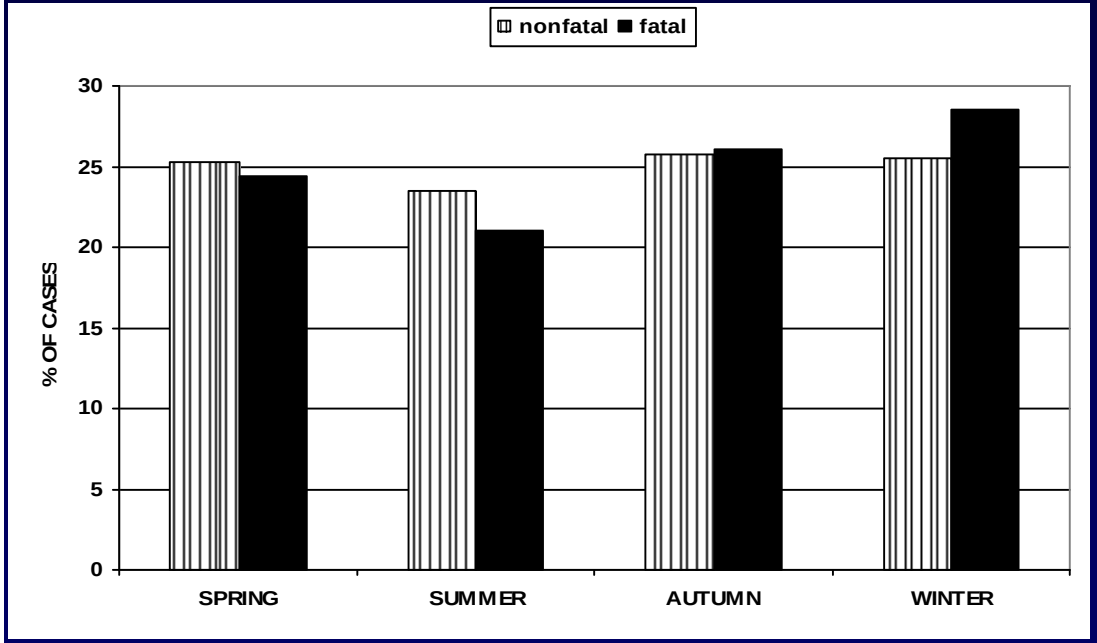
Variabilità stagionale nell'insorgenza della malattia peptica e dell'utilizzo dei PPI: esiste una correlazione?

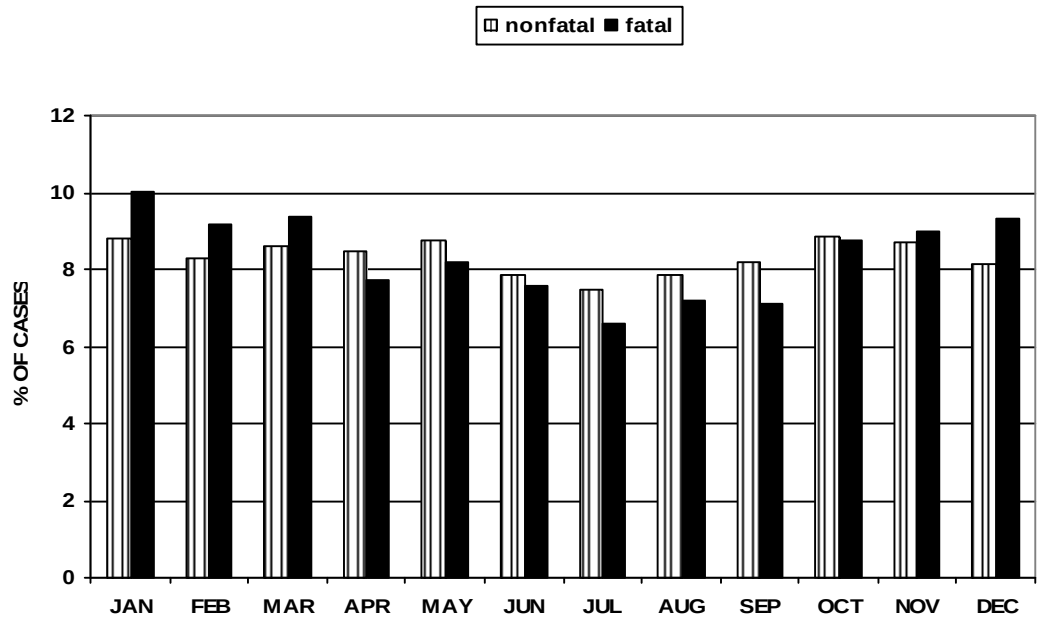
Massimo Gallerani , Roberto Manfredini

Seasonal and weekly patterns of hospital admissions for nonfatal and fatal myocardial infarction☆

Roberto Manfredini MD[a,b,*], Fabio Manfredini MD[c], Benedetta Boari MD[d], Elisabetta Bergami MD[d], Elisa Mari MD[d], Susanna Gamberini MD[b], Raffaella Salmi MD[d], Massimo Gallerani MD[d]

Regione Emilia Romagna, Italy, 1998-2006 (n = 40,386)

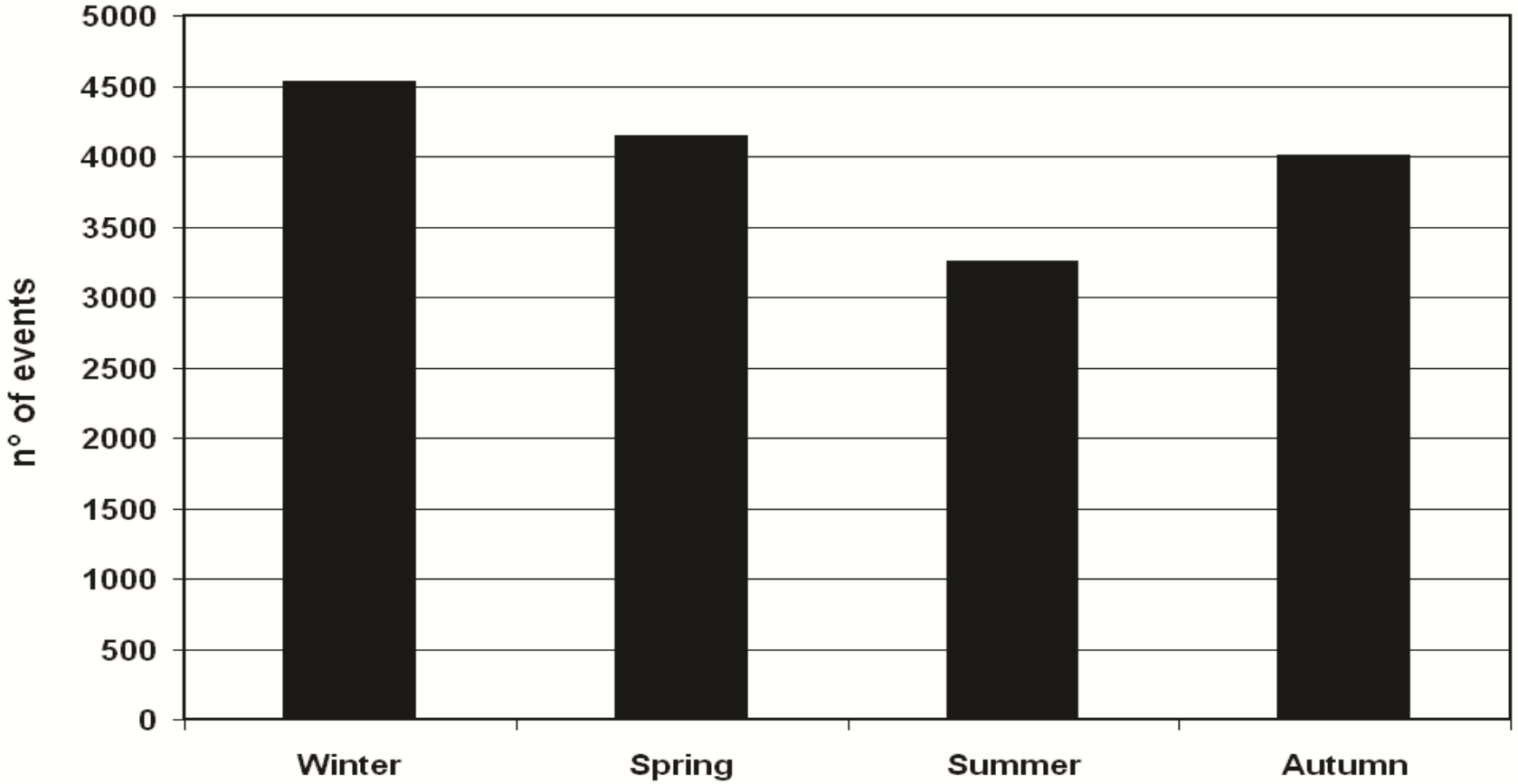




Manfredini et al, *Am J Emerg Med 2009*

Seasonal Variation in Heart Failure Hospitalization

Massimo Gallerani, MD; Benedetta Boari, MD; Fabio Manfredini, MD; Roberto Manfredini, MD



Clin. Cardiol. 2011; 34

SEASONAL VARIATION IN THE ONSET OF ACUTE PANCREATITIS.

Gallerani M, Boari B, Salmi R, Manfredini R.

A circannual variation in the onset of several acute diseases, mostly dealing with cardiovascular system, has been reported. The present study was to verify the possible existence of a seasonal variability in the onset of acute pancreatitis.

METHODS:
All patients consecutively admitted to the Hospital of Ferrara, Italy, between January 1998 to December 2002, whose disch n, cases were catego fit and partial Four

RESULTS:
During the s ncidence was found i asis or alcoholism. k in March (95% C.L.: quently in December-F a seasonal peak in November-December (P<0.001).

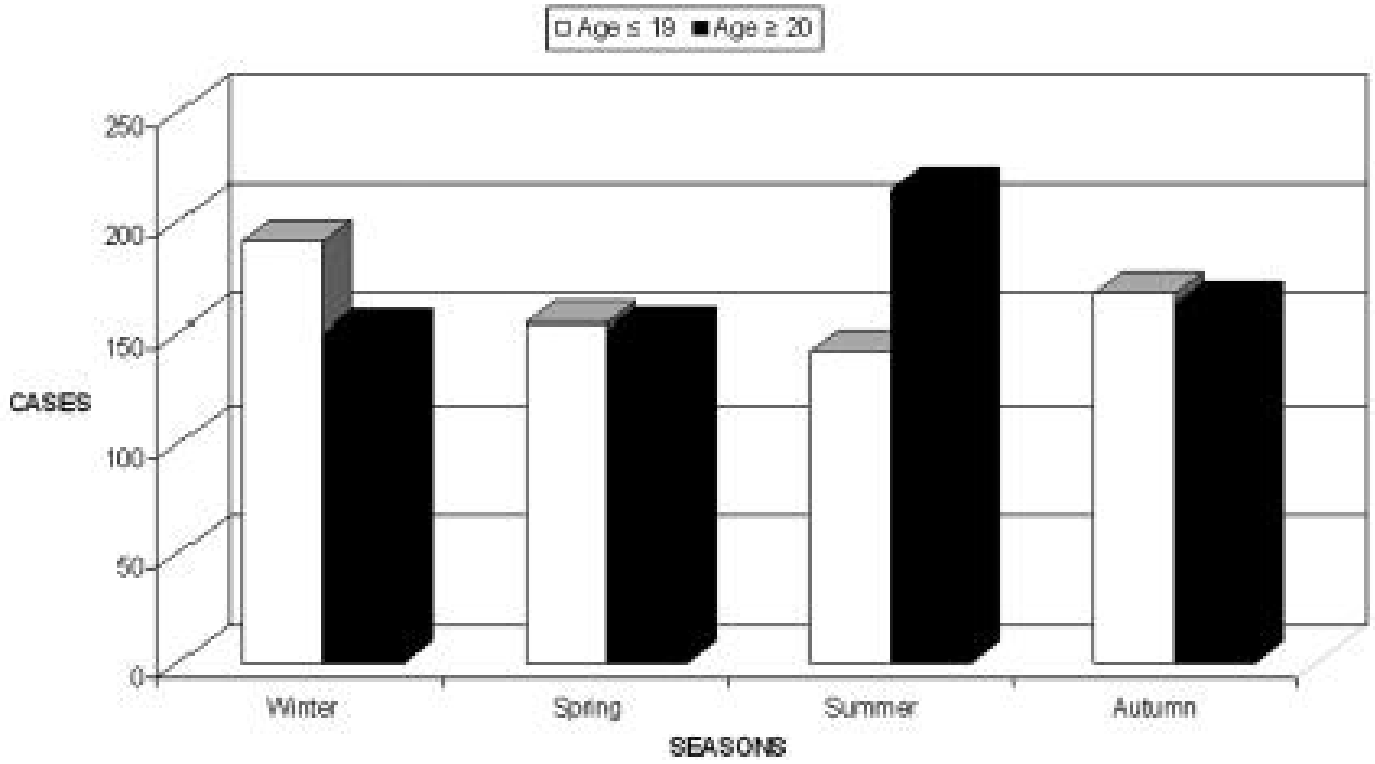
CONCLUSION:
This study shows the existence of a circannual variation in the onset of acute pancreatitis, with a significantly higher frequency of events in the spring, especially for patients with cholelithiasis or alcoholism. Moreover, events occurring during the colder months seem to be characterized by a higher mortality rate.

CONCLUSION:
This study shows the existence of a circannual variation in the onset of acute pancreatitis, with a significantly higher frequency of events in the spring, especially for patients with cholelithiasis or alcoholism.

Table 2. Seasonal distribution of acute appendicitis: total number of cases, by gender, age and presence of peritonitis (ICD-9 540.0)

Month	Total sample (n= 1331, %)	Males (n= 673, %)	Females (n= 658, %)	Age ≤ 19 years (n= 654, %) *	Age ≥ 20 years (n= 677, %) ** #	ICD-9 540.0 (n= 90, %)##
Winter	340 (25.5)	168 (25)	173 (26.3)	191 (29.2)	150 (22.2)	18 (20)
Spring	305 (22.9)	156 (23.2)	149 (22.6)	154 (23.5)	151 (22.3)	19 (21.1)
Summer	358 (26.9)	191 (28.4)	165 (25.1)	142 (21.7)	214 (31.6)	38 (42.2)
Autumn	328 (24.6)	158 (23.5)	171 (26)	167 (25.5)	162 (23.9)	15 (16.7)

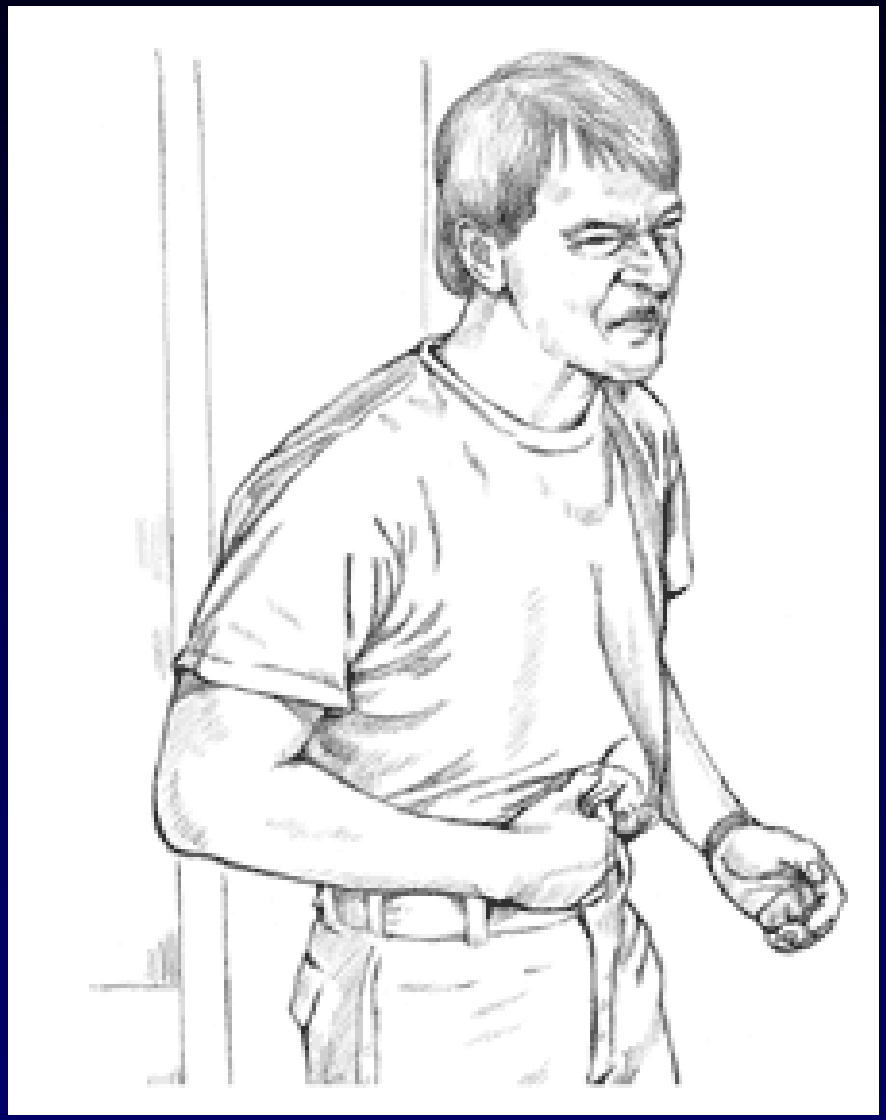
* in the subgroup age ≤ 19 years: $\chi^2 = 8.07$, $p = 0.046$
** in the subgroup ≥20 years: $\chi^2 = 16.33$, $p = 0.001$
# between the subgroup s by age: $\chi^2 = 19.2$, $p < 0.0001$
in the subgroup with peritonitis: $\chi^2 = 14.22$, $p = 0.002$



Seasonal variation in onset of acute appendicitis

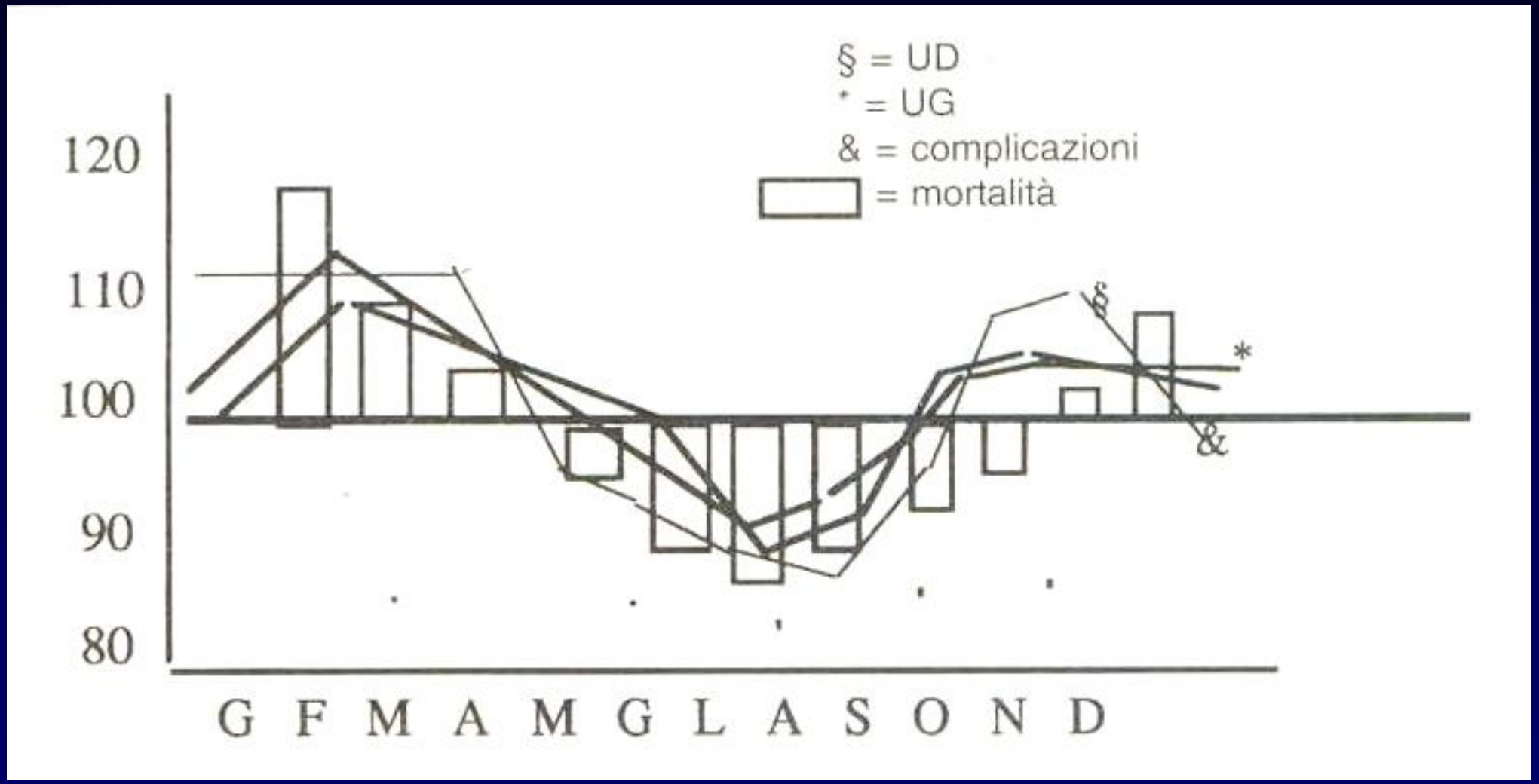
Gallerani M, Boari B, Anania G, Cavallesco G , Manfredini R.

Clin Ter 2006; 157: 123-7.



Gullini – Pazzi
L'ulcera peptica: dall'epidemiologia alla terapia
1996

Variazione mensile dei ricoveri per complicanze (emorragia e/o perforazione) e della mortalità per ulcera gastrica e duodenale



Seasonal variation in the onset of PUD and related complications in several countries and continents

Disease	Author/Setting	Sample size	Source of data	Time period	Peak
Peptic ulcer					
	Scholtyssek et al, 1986 (Germany)	1091	Single center	1973 - 1983	Autumn (Nov)
	Sonnenberg et al 1992 (U.S.A.)	Unknown	Nationwide database	Not available	Jan to Mar, Oct
	Savarino et al, 1996 (Italy)	319	Single center	1987 - 1992	Autumn (Nov-Dec) Winter (Jan-Mar)

Disease	Author/Setting	Sample size	Source of data	Time period	Peak
Hemorrhage					
	Marbella et al, 1988 (U.S.A.)	285	Single center	1974 - 1976	Jan-Feb, Jul-Aug, Nov-Dec
	Tishchenko et al, 1990 (Russia)	390	Single center	Not available	Jan, Oct, Sept
	Shih et al, 1993 (Taiwan)	2,889	Single center	1987 - 1992	Jan - Feb
	Thomopoulos et al, 1997 (Greece)	1,992	Single center	1991 - 1996	Apr and Oct
	Tsai et al, 1998 (Taiwan)	10,331	Single center	1989 - 1996	Nov - Mar
	Rodrìguez et al, 1999 (Mexico)	275	Single center	1991 - 1997	May, June, Nov
	Nomura et al, 2001 (Japan)	441	Single center	1996 - 1999	Autumn and Winter
	Lopez-Cepero et al, 2005 (Spain)	499	Single center	1998 - 2001	No seasonal variation

Disease	Author/Setting	Sample size	Source of data	Time period	Peak
Perforation					
	Adler et al, 1984 (Australia)	1,187	Hospitals of West. Australia	1971 - 1981	Nov - Jan
	Christensen et al, 1988 (Denmark)	296	7 depts of gastrointest. surg.	1975 - 1984	August-September
	Bendahan et al, 1992 (Israel)	540	Single center	1977 - 1986	Nov - Feb
	Csendes et al, 1995 (Chile)	Unknown	9 hospitals	1980,1985,1990	Autumn
	Yen et al, 1996 (Taiwan)	1,787	Single center	1991 - 1992	Feb-Mar
	Svanes et al, 1998 (Norway)	1,480	Area hospitals	1935 - 1990	May-Jul, Nov-Dec
	Wysocki et al, 1999 (Poland)	Unknown	Single center	1991 - 1995	May-Jul, Sep-Oct
	Janik & hwirot, 2000 (Poland)	441	Single center	1977 - 1996	No seasonal variation
	Budzynski et al, 2000 (Poland)	220	Single center	1993 - 1997	No seasonal variation
	Liu et al, 2003 (China)	24,252	17 hospitals	1992 - 1997	Winter and Spring
	Kocer et al, 2006 (Turkey)	269	Single center	2001 - 2004	Winter

Manfredini *et al. BMC Gastroenterology* 2010, **10**:37
http://www.biomedcentral.com/1471-230X/10/37

BMC Gastroenterology

RESEARCH ARTICLE Open Access

Seasonal pattern of peptic ulcer hospitalizations: analysis of the hospital discharge data of the Emilia-Romagna region of Italy

Roberto Manfredini*[1,2], Roberto De Giorgio[3], Michael H Smolensky[4], Benedetta Boari[5], Raffaella Salmi[5], Davide Fabbri[6], Edgardo Contato[7], Mauro Serra[3], Giovanni Barbara[3], Vincenzo Stanghellini[3], Roberto Corinaldesi[3] and Massimo Gallerani[5]

SUBJECTS AND METHODS

The analysis included all consecutive PU cases admitted to hospitals in the Emilia Romagna region from January 1998 to December 2005 as recorded in the database of all hospital admissions maintained by the Center for Health Statistics for the Emilia Romagna region of Italy.

The ICD-9-CM codes used for identifying patients with PU were from 531.00 to 534.91.

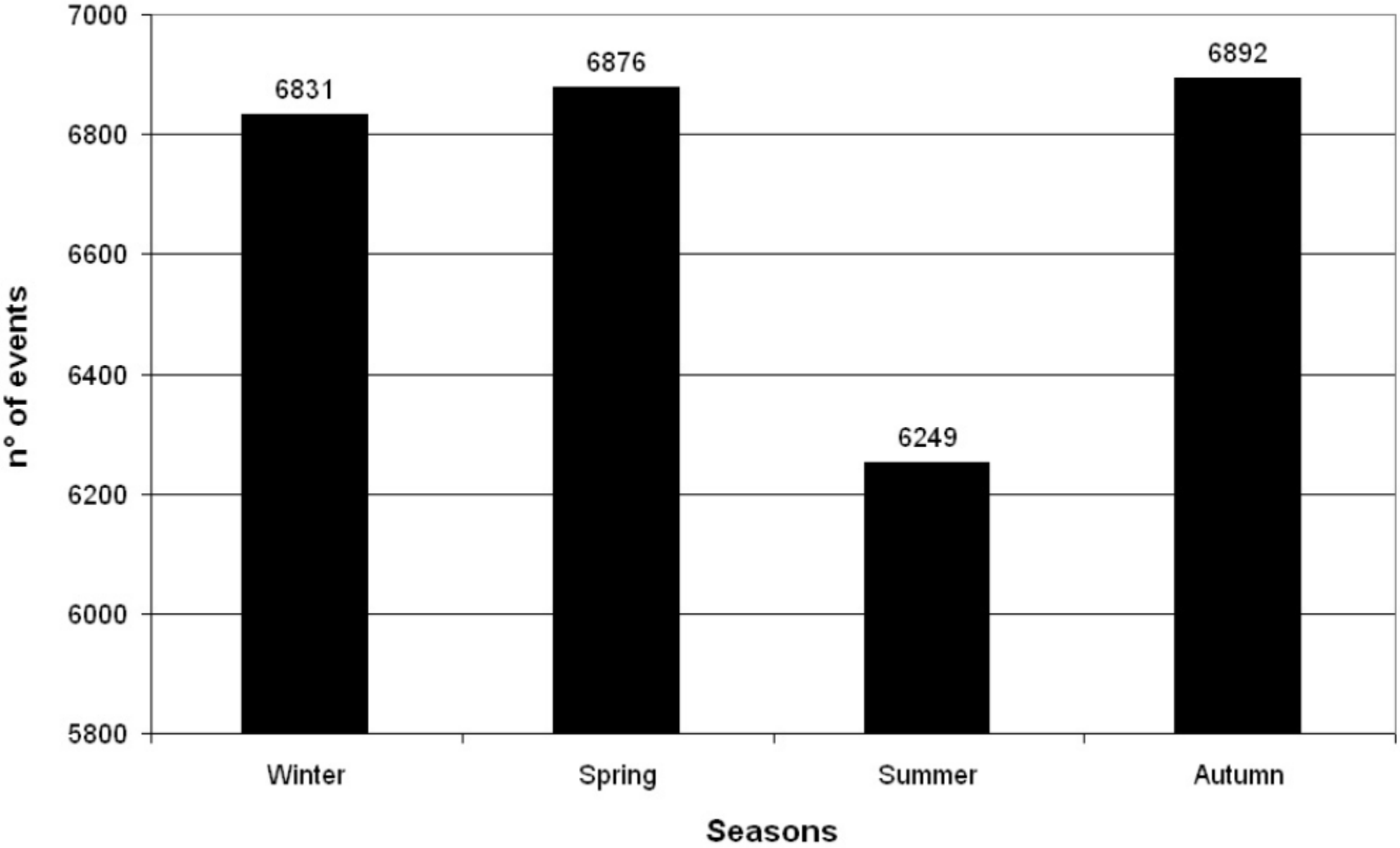
However, to precisely identify only admissions directly related to PU, only cases in which PU was indicated as first or second discharge diagnosis were abstracted from the database.

Furthermore, the total sample was divided into subgroups by sex, age (<65, 65-74, >75 yrs), type of lesion - gastric ulcer or GU, duodenal ulcer or DU, peptic ulcer, site unspecified, and gastrojejunal ulcer. They were also categorized by main complication, i.e., hemorrhage due to gastrojejunal ulcer, perforation, final outcome (fatal vs. non-fatal), and geographical features of case residence.

RESULTS

In the considered period, the dtabase of the RER identified 26,848 hospital admission corrisponding to the ICD-9 CM codes indicative of PUD, 16,795 (62,5%) were males (mean age 65 ± 16 yrs) and 10,053 females (mean age 72 ± 15 yrs, t 35.508 $p < 0,001$)

Seasonal distribution of severe PUD hospitalizations in the E.R.. Region of Italy



Monthly distribution of severe PUD hospitalizations in the E.R. Region of Italy

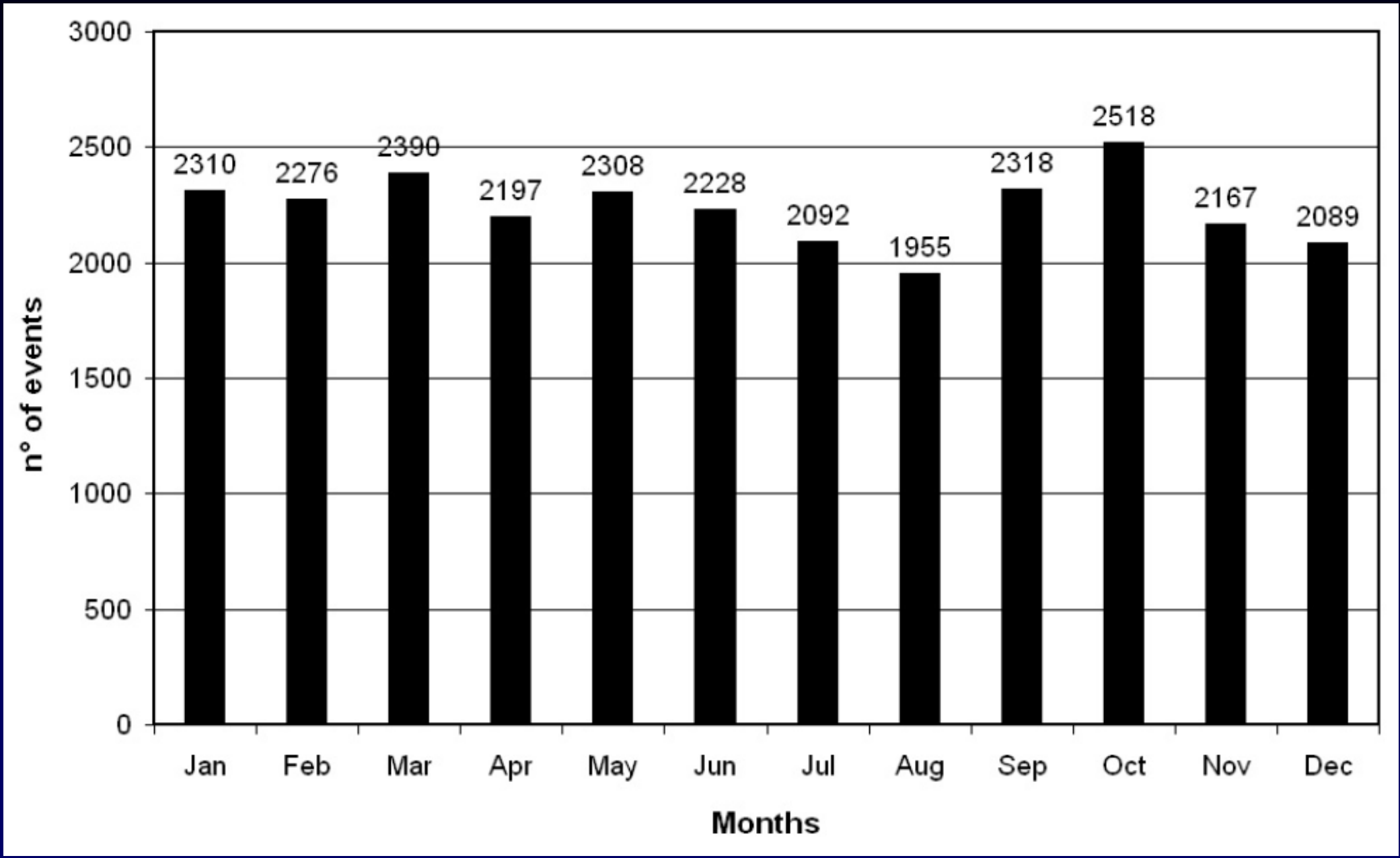


Table 2: Seasonal distribution of peptic ulcer: χ2 test for goodness of fit.

		n°	winter n°(%)	spring n°(%)	summer n°(%)	autumn n°(%)	X2	p	Difference between subgroups	
Total of sample		26,848	6,831 (25.4)	6,876 (25.6)	6,249 (23.3)	6,892 (25.7)	42.88	<0.001		
Gender	**Women**	10,053	2,483 (24.7)	2,656 (26.4)	2,381 (23.7)	2,533 (25.2)	15.59	0.002	t = 10.10	p = 0.022
	Men	16,795	4,348 (25.9)	4,220 (25.1)	3,868 (23.0)	4,359 (26.0)	37.58	<0.001		
Age subgroups	**<65 yrs**	7,151	1,754 (24.5)	1,807 (25.3)	1,680 (23.5)	1,910 (26.7)	15.71	0.001	t = 16.62	p = 0.011
	65-74 yrs	8,849	2,358 (26.6)	2,208 (25.0)	2,047 (23.1)	2,236 (25.3)	22.21	<0.001		
	≥ 75 yrs	10,848	2,719 (25.1)	2,861 (26.4)	2,522 (23.2)	2,746 (25.3)	21.94	<0.001		
Final outcome	**Fatal**	1,290	358 (27.8)	326 (25.3)	317 (24.6)	289 (22.4)	7.52	n.s.	t = 9.51	p = 0.03
	Non fatal	25,558	6,473 (25.3)	6,550 (25.6)	5,932 (23.2)	6,603 (25.8)	45.01	<0.001		
With hemorrhage		12,682	3,247 (25.6)	3,172 (25.0)	2,970 (23.4)	3,293 (26.0)	19.26	<0.001		
With perforation		2,541	596 (23.5)	688 (27.1)	593 (23.3)	664 (26.1)	10.92	0.013		
Gastric ulcer	**Total**	976	242 (24.8)	242 (24.8)	212 (21.7)	280 (28.7)	9.54	0.024		
	Acute	734	181 (24.7)	179 (24.4)	164 (22.3)	210 (28.6)	6.07	n.s.	t = 0.758	p = n.s.
	Chronic	242	61 (25.2)	63 (26.0)	48 (19.8)	70 (28.9)	4.18	n.s.		
Duodenal ulcer	**Total**	24,105	6,075 (25.2)	6,180 (25.6)	5,636 (23.4)	6,214 (25.8)	35.44	<0.001		
	Acute	12,180	3,038 (24.9)	3,136 (25.7)	2,866 (23.5)	3,140 (25.8)	16.22	0.001	t = 30.37	p < 0.001
	Chronic	7,415	1,594 (21.5)	2,004 (27.0)	1,814 (24.5)	2,003 (27.0)	61.47	<0.001		
Peptic ulcer, site unspecified	**Total**	2,795	768 (27.5)	711 (25.4)	622 (22.3)	694 (24.8)	15.56	0.002		
	Acute	359	91 (25.3)	85 (23.7)	86 (24.0)	97 (27.0)	1.04	n.s.	t = 1.788	p = n.s.
	Chronic	2,383	628 (26.4)	626 (26.3)	536 (22.5)	593 (24.9)	9.3	0.026		
Gastrojejunal ulcer		51	17 (33.3)	13 (25.5)	10 (19.6)	11 (21.6)	2.25	n.s.		

Statistical analysis: χ2 test for goodness of fit (SPPS 13.0 for Windows, Chicago, IL, 2004).

Table 3: Seasonal distribution of PUD hospital admission: results of chronobiological time series analysis.

	n	PR	MESOR (± SE)	Peak (1°, 2°, 3°)	Nadir	P*
Total cases	26,848	83.3	2,236 (26.38)	Sept/oct, Jan/ Feb, Apr/May	July	0.035
Males	16,795	78.0	1,398.69 (20.43)	Sept/Oct, Jan/ Feb, Apr/May	July	0.064
Females	10,053	87.1	837.43 (9.24)	Sept/Oct, Apr/ May, Jan/Feb	July	0.032
Age < 65 yrs	7,151	73.8	595.77 (8.89)	Sept/Oct, Jan/ Feb, Apr/May	July	0.144
Age 65-74 yrs	8,849	86.8	736.75 (9.60)	Jan/Feb, Sept/ Oct, Apr/May	July	0.022
Age > 75 yrs	10,848	71.8	903.60 (14.80)	Sept/Oct, Apr/ May, Jan/Feb	July	0.123
Final outcome: fatal	1,290	58.7	107.48 (3.03)	Dec/Jan, Apr/ May, Aug/Sept	October	0.407
Final outcome: non-fatal	25,558	83.6	2,128.64 (25.71)	Sept/Oct, Jan/ Feb, Apr/May	July	0.067
With hemorrhage	12,682	63.3	1,056.51 (18.37)	Sept/Oct, Jan/ Feb, Apr/May	July	0.153

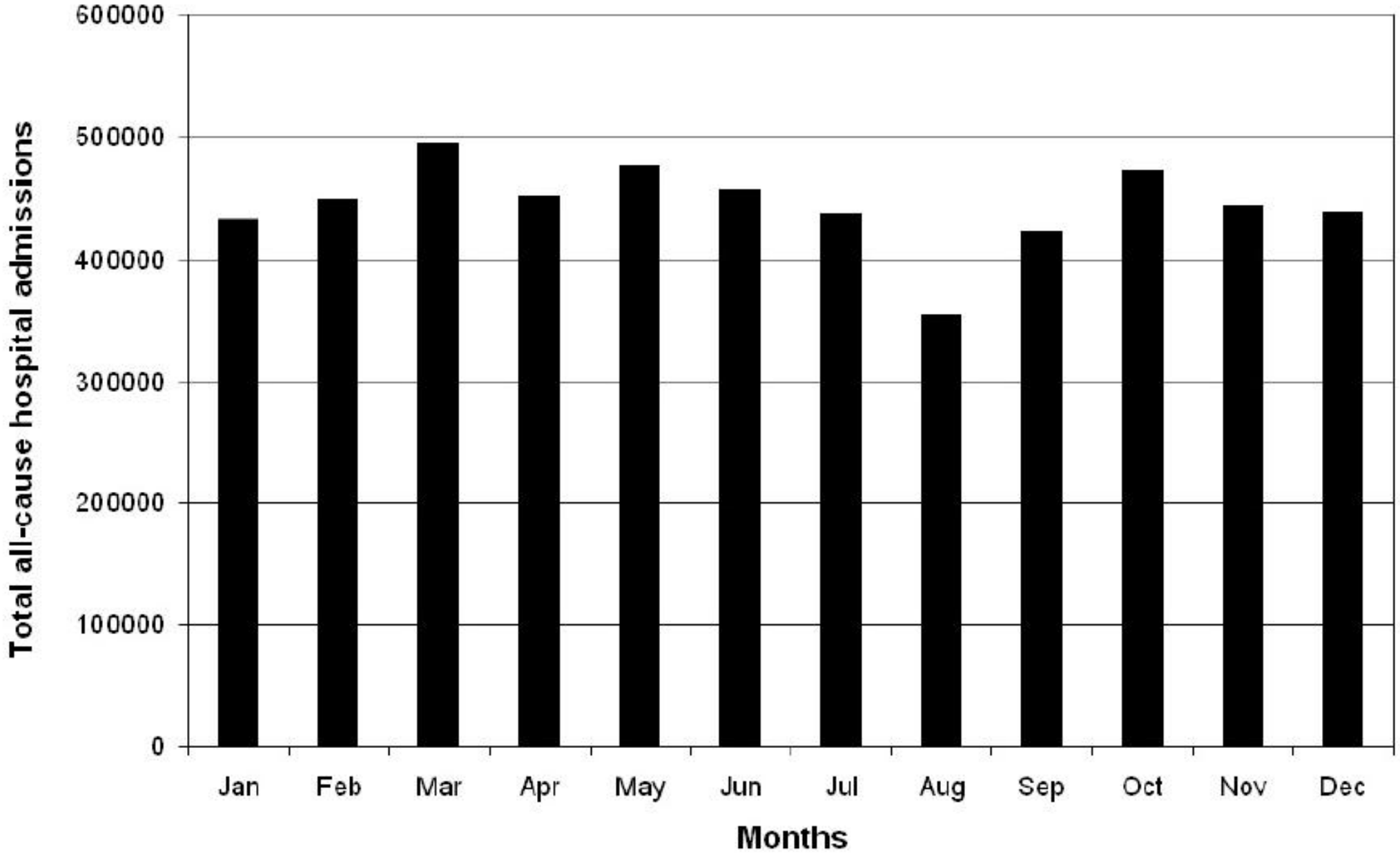


Figure 3 Total all-cause hospital admissions by month of the year (1998-2005) in the Emilia Romagna Region of Italy.

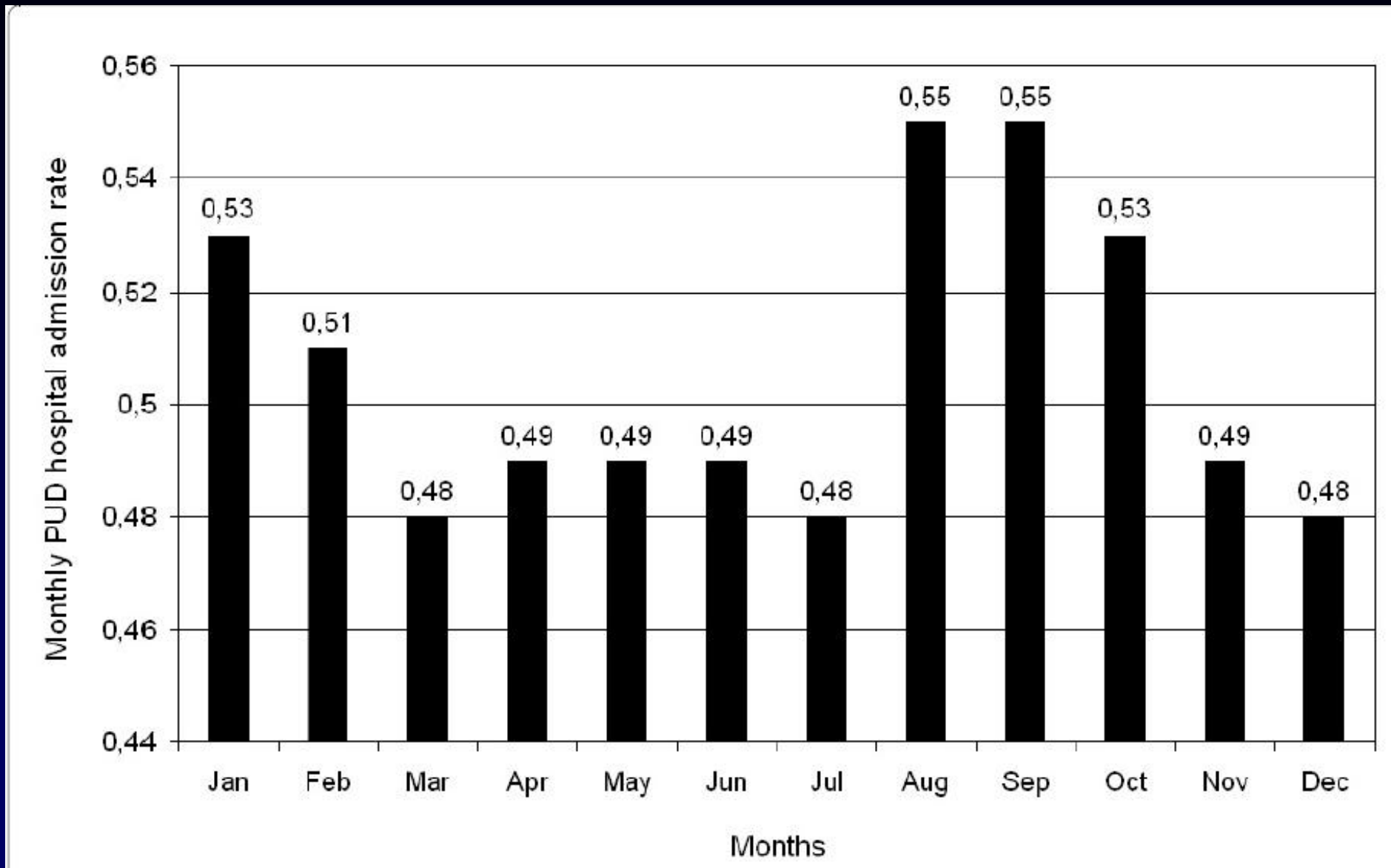
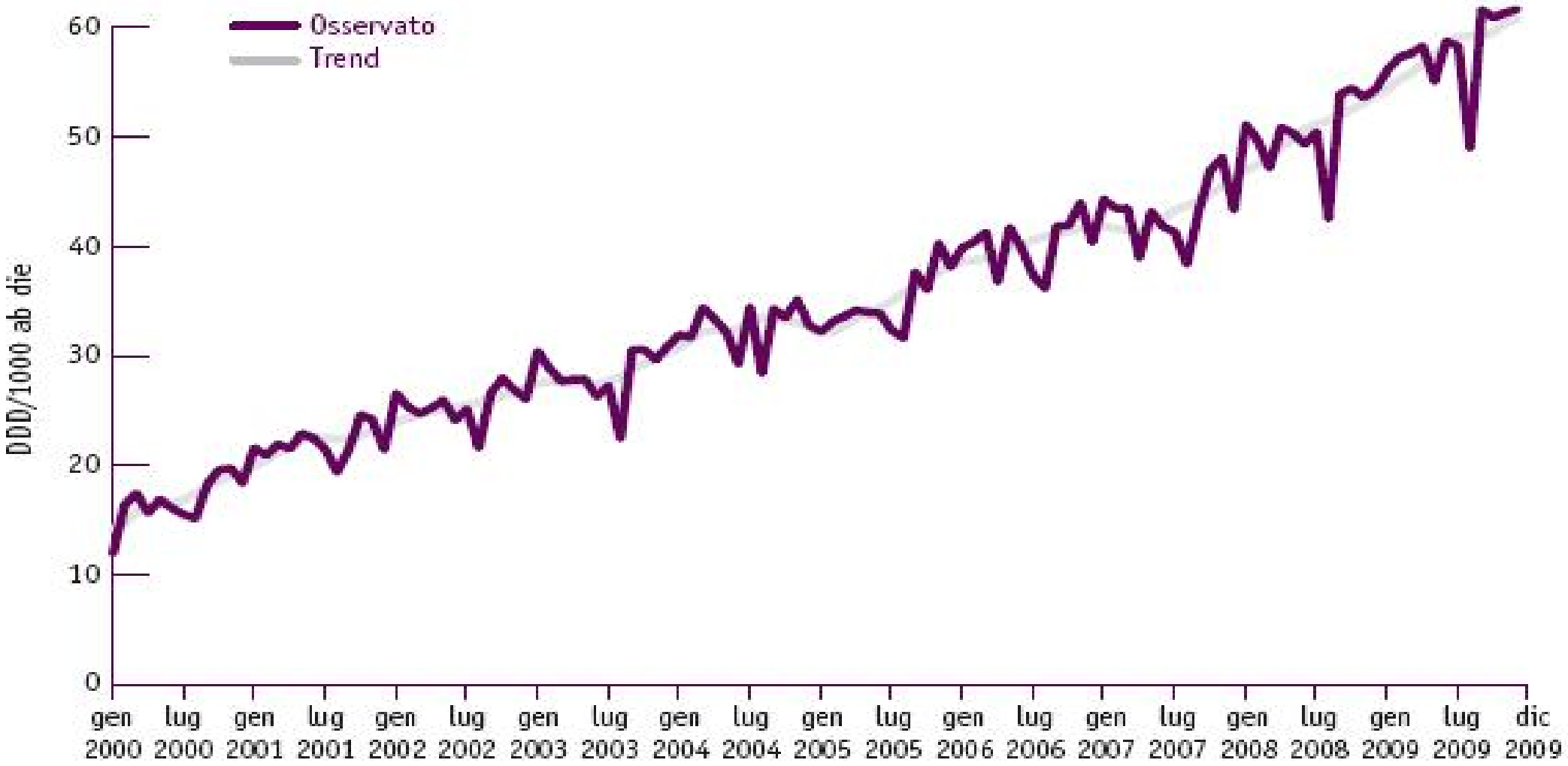


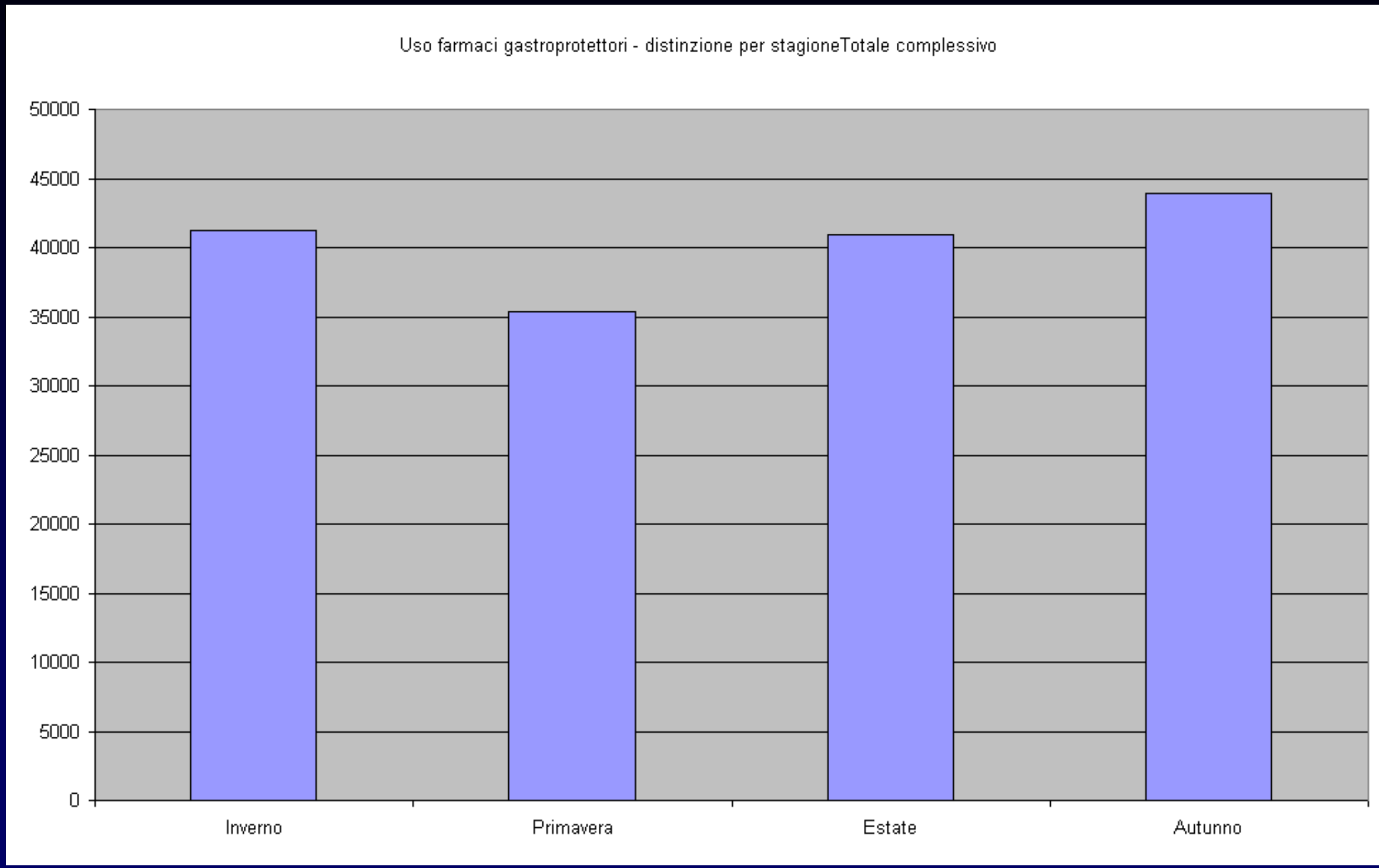
Figure 4 Monthly PUD hospital admission rate (number of PUD admissions relative to total number of all hospital admission, independent of cause each month) in the Emilia Romagna Region of Italy.

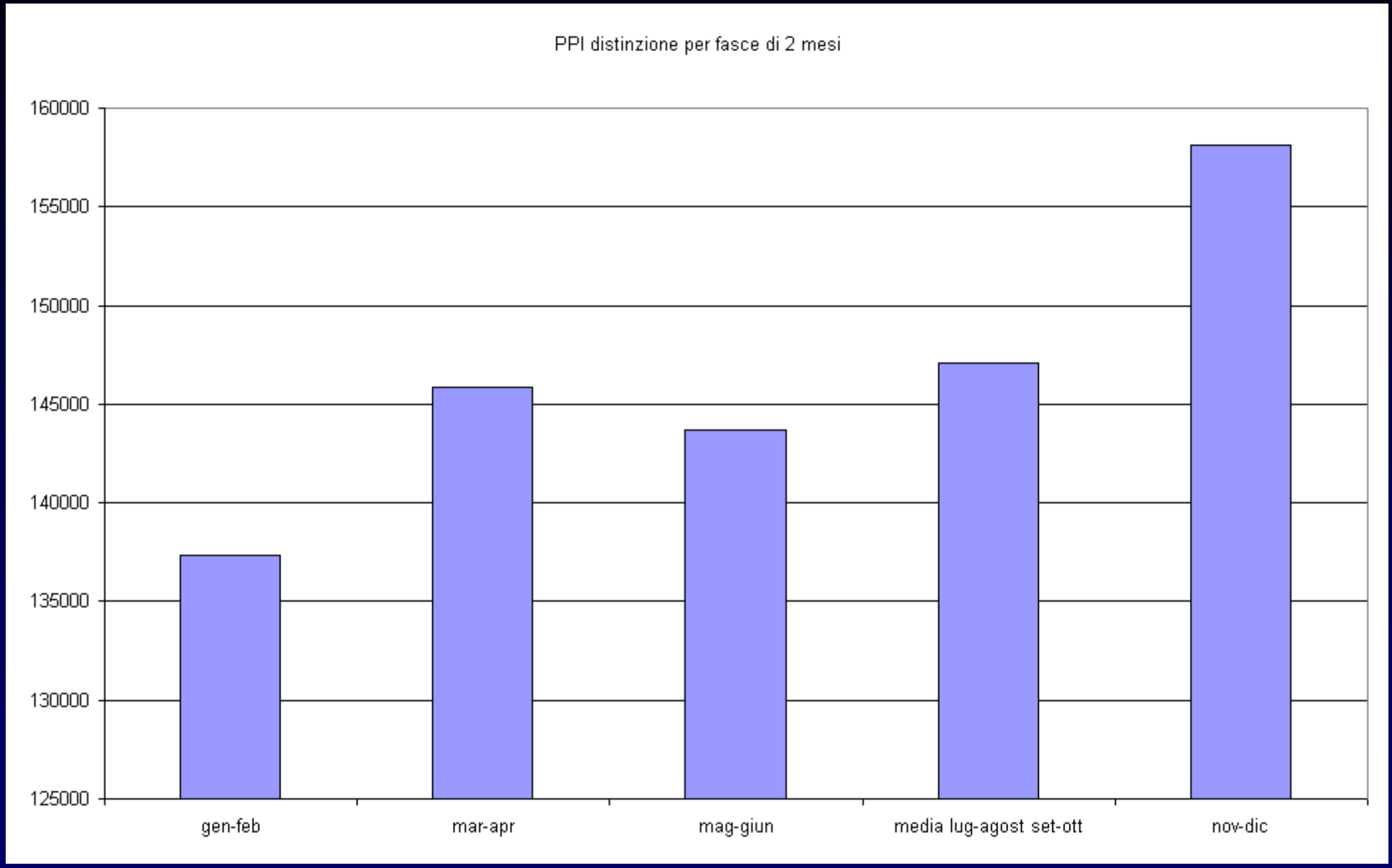
POSSIBILI CAUSE

- Bassa temperatura e possibile correlazione con riacerbazione di alcuni patologie: articolari, cardiovascolare
- Differente frequenza di consumo di alcuni tipi di farmaci (es. inverno e uso di FANS)
- Diversa incidenza di infezioni (es. H. pylori)
- Consumo diverso di alimenti e bevande (es. maggior consumo di alcoolici in inverno)

Antiacidi e antiulcera, andamento temporale del consumo territoriale di classe A-SSN (2000-2009)




Uso farmaci gastroprotettori - distinzione per stagioneTotale complessivo
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
Inverno
Primavera
Estate
Autunno


PPI distinzione per fasce di 2 mesi
160000
155000
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145000
140000
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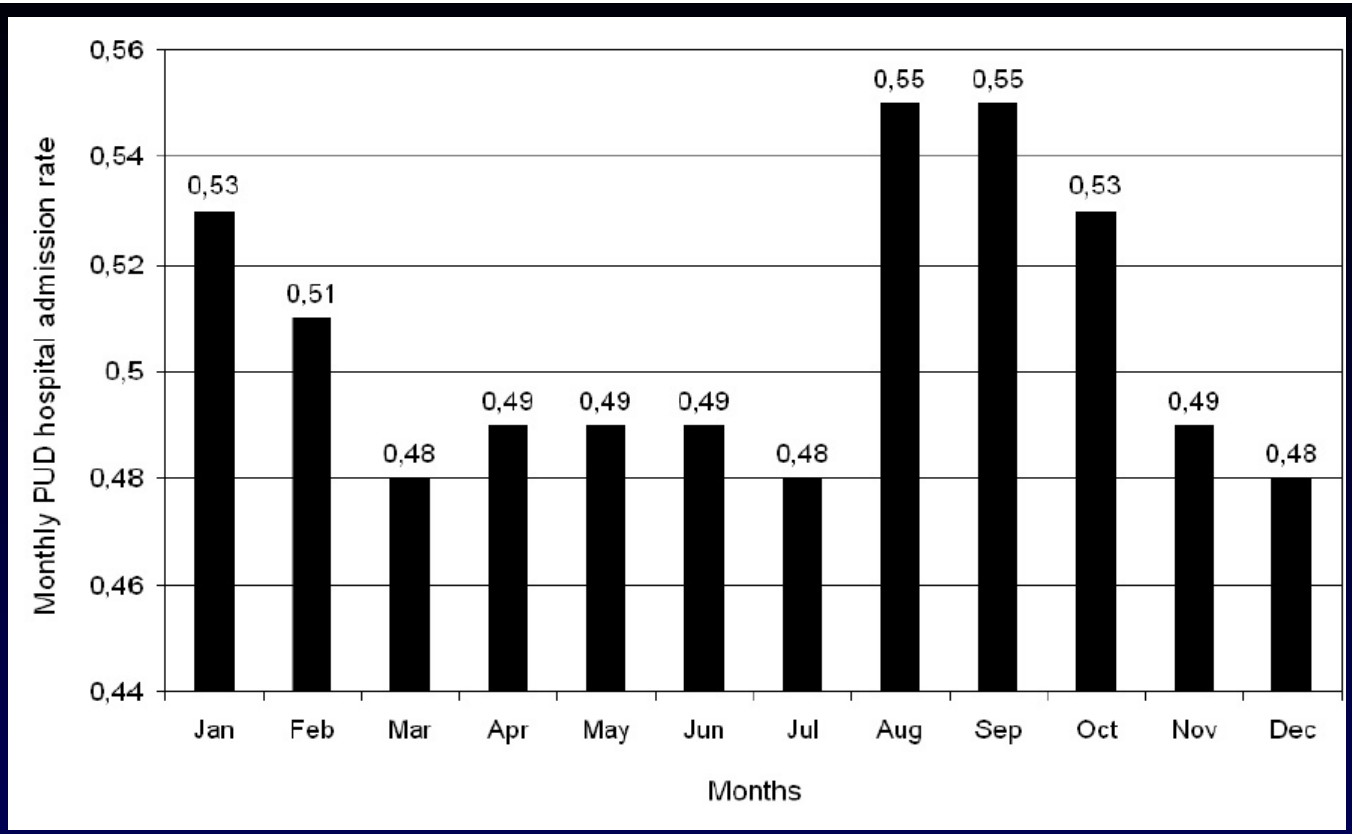
130000
125000
gen-feb
mar-apr
mag-giun
media lug-agost set-ott
nov-dic


Monthly PUD hospital admission rate
0,56
0,54
0,52
0,5
0,48
0,46
0,44
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Jan
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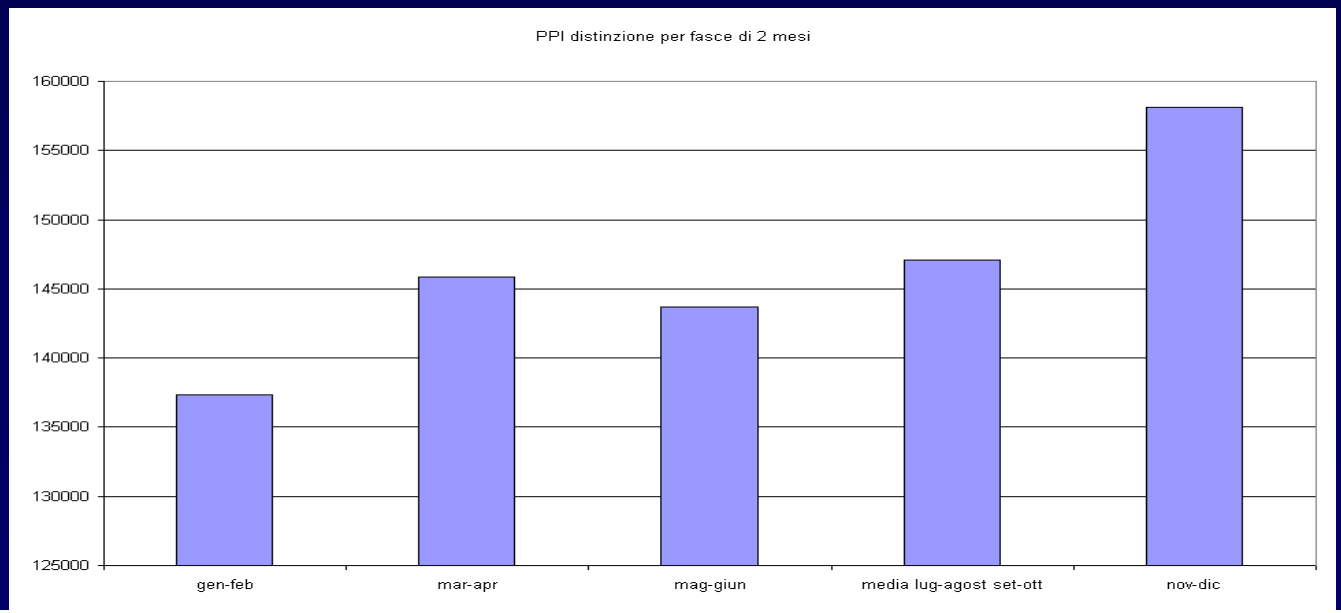
Months


PPI distinzione per fasce di 2 mesi
160000
155000
150000
145000
140000
135000
130000
125000
gen-feb
mar-apr
mag-giun
media lug-agost set-ott
nov-dic

Conclusioni

- **Esiste una variazione stagionale nell'insorgenza e nell'ospedalizzazione per UP, con picchi prevalentemente nei periodi nel tardo autunno e inverno**
- **Nel rapporto tra numero totale dei ricoveri e quelli per UP il periodo di massima frequenza è invece per l'inizio dell'autunno**
- **Il periodo di massimo consumo dei farmaci gastroprotettori è il tardo autunno e inizio dell'inverno**

Basta chiacchiere

Sganciatemi il mio Maalox !!!