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RAPID INCREASES AND SEASONAL VARIATIONS IN NATIONAL HEALTH CARE UTILIZATION AND COSTS DUE TO BENIGN PROSTATIC HYPERPLASIA IN SOUTH KOREAN MALES

Hypothesis / aims of study

To determine the amount of national health care utilization accounted for by benign prostate hyperplasia (BPH).
To identify seasonal and regional variations in national health care utilization and cost due to BPH.

Study design, materials and methods

The Health Insurance Review and Assessment service (HIRA) database, which contains reimbursement records from all medical facilities in South Korea, was used in this study. Patients aged 20 or older diagnosed from 2004 to 2008 with a primary diagnosis of BPH [ICD-10 diagnostic code: N40] were included.
Age and year-specific number of hospital visits (HVs), durations of treatment (DT), and the total and per capita insurance payments (TAIPs and PCIPs), as well as their seasonal variations were evaluated.

Results

A total of 12,088,995 HVs were studied. Total HVs increased 1.7 times and DTs almost doubled in 2008 as compared with 2004.
HVs, DTs, and TAIPs showed linearly increasing patterns from year to year. Time series analysis showed that HVs increased in the winter and demonstrated a seasonal pattern.
Poisson regression analysis showed that annual variations in HVs, DTs, TAIPs, and PCIPs differed by age. In patients older than 40, HVs significantly increased every year compared with the previous year, and in patients in their 60s and 80s, DTs were markedly higher than in other age groups. The rate of increase in PCIP was steeper for patients ≥ 50 than for patients < 50 years old.

Interpretation of results

BPH has a large presence in health care expenditures and use in Korea, both at the level of individual patients and at a national level. The demand for treatment for BPH in Korea has nearly doubled over the 5-year study period, as demonstrated by the dramatic increase in HVs, DTs, and TAIP. This remarkable elevation in medical costs over the relatively short period of time was observed, regardless of regional differences and of practice patterns. Our findings could be explained by a number of factors, such as increased physician interest in BPH, the development of new BPH drugs, and an increase in the number of patients seeking treatment. In addition, the newly available minimally invasive surgical technologies (MIST) are likely to have contributed.
By analyzing hospital visits, we found that the frequency of hospital visits increased in the autumn, peaked in December, and reached a nadir from February to April. This increased incidence of BPH-related HVs in the winter is likely caused by the sudden change in temperatures between autumn and winter.

Concluding message

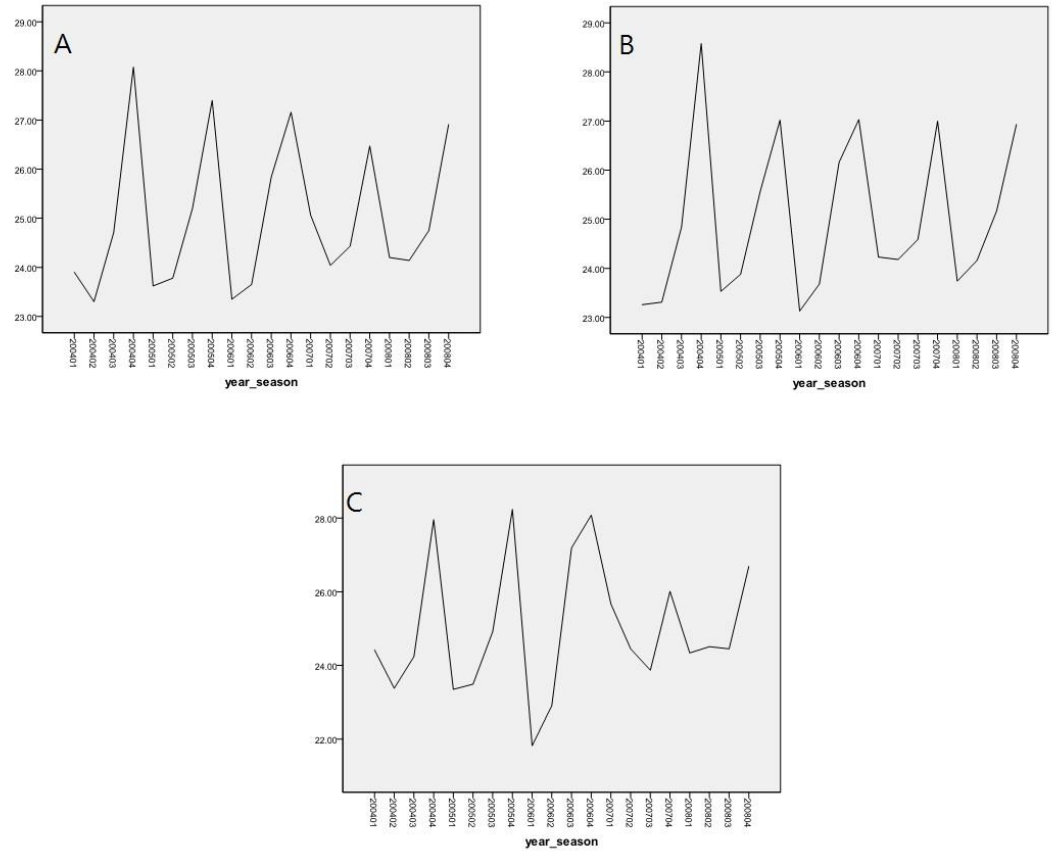
The national health care utilization due to BPH is increasing rapidly in South Korea, and this increase is especially remarkable in the elderly.
Seasonal variations in HVs demonstrated that the national health care utilization for BPH patients increased during the winter.

Table 1 - Hospital visits and duration of treatment by age groups and by years

Hospital visits	2004		2005		2006		2007		2008		Sub total
	inpatient	outpatient	inpatient	outpatient	inpatient	outpatient	inpatient	outpatient	inpatient	outpatient	
20s	72	1,960	43	1,662	26	1,767	52	856	36	684	7,158
30s	924	19,474	1,099	20,207	1,299	20,311	1,247	17,225	760	16,837	99,383
40s	5,649	110,862	7,502	118,759	7,366	141,098	6,336	150,749	7,037	160,455	715,813
50s	21,263	341,120	24,517	382,598	29,495	464,709	29,654	504,770	26,379	553,075	2,377,580
60s	56,007	639,286	68,017	701,119	74,345	818,942	76,642	921,221	78,455	1,043,364	4,477,398
70s	44,946	444,778	52,426	510,746	68,036	616,242	82,399	716,297	83,302	833,513	3,452,685
>80s	15,582	124,806	16,101	142,189	23,133	166,459	28,483	189,011	32,525	220,689	958,978
Sub total	144,443	1,682,286	169,705	1,877,280	203,700	2,229,528	224,813	2,500,122	288,494	2,828,617	**12,088,995**
Total	1,826,729		2,046,985		2,433,228		2,724,942		3,057,111		
Duration of Treatment	2004		2005		2006		2007		2008		Sub total
	inpatient	outpatient	inpatient	outpatient	inpatient	outpatient	inpatient	outpatient	inpatient	outpatient	
20s	111	2,414	123	1,925	86	1,855	86	927	57	844	8,428

30s	1,426	24,316	1,574	24,736	1,871	24,090	2,013	20,486	1,695	20,564	122,771
40s	7,761	136,217	10,142	143,254	10,533	175,727	9,925	189,279	11,550	206,786	901,174
50s	32,435	713,919	36,367	829,935	45,680	956,906	45,912	990,598	46,198	1,017,954	4,715,900
60s	92,490	1,017,676	105,926	1,256,252	119,984	1,624,750	126,144	2,047,781	134,570	2,597,319	9,122,976
70s	75,740	1,148,628	5,228	1,286,461	109,966	1,488,953	128,577	1,636,811	136,303	1,907,998	8,004,668
>80s	26,885	183,415	26,936	220,867	35,950	278,786	41,908	343,601	47,988	428,972	1,675,308
Sub total	236,848	3,226,672	26,296	3,763,433	24,070	4,551,063	54,565	5,229,493	78,361	6,220,426	**24,551,225**
Total	3,463,520		4,029,726		4,875,137		5,584,055		6,598,787		

Fig. 1-A,B,C. Quarterly amount of: A. Hospital visits per month, B. Duration of treatment per month, and C. Total amount of insurance payment per month show seasonality (200401 = first quarter of year 2004, 200402 = second quarter of year 2004, 200403 = third quarter of year 2004, 200404 = fourth quarter of year 2004, etc.)



Disclosures

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