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The Current Status of Medical Use According to the Time and Region of Stroke Patients in Korea.

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Introduction

In Korea, hospitals are mainly concentrated in the metropolitan area (Seoul city and Gyeonggi-do). We hypothesized that many stroke patients living in rural areas will be treated not in their local area but in the metropolitan area during the subacute stage. So, in this research, we analyzed the actual use of hospitals in each region according to the time of stroke.

Methods

This research used a sample cohort database from National Health Insurance Service in Korea from year 2008 to 2011, and a total 8408 stroke patients were included. We checked in which hospital and which areas stroke patients received rehabilitation treatment in subacute (stroke onset~6months) and chronic stage (6~24months). We divided the country into 15 regions and analyzed the areas where the stroke first occurred and the hospital where the treatment was received by the time.

Results

In the subacute stage, more than 80% of patients were treated in the same area. In Incheon city and Chungcheongnam-do, more than 10% of patients were treated in the metropolitan area. In the case of Gwangju, 14% of the patients were treated in Jeollanam-do, and in Gangwon-do, more than 5% of patients were treated in Chungcheongbuk-do or metropolitan area. In the chronic stage, the rate of treatment in the same area was higher than in the subacute stage, and almost 90% of patients in all regions were treated in the same area.

Conclusion

Based on the Results, most patients were receiving rehabilitation treatment at their local medical facility. This might be due to the fact that regional rehabilitation hospitals built by the government were established in each region, and a large number of private rehabilitation hospitals and nursing hospitals were established within a decade.

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Treated Area Occurred Area	Metro politan area	Busan	Daegu	In cheon	Gwang ju	Dae jeon	Ulsan	Gang won	Chung buk	Chung nam	Jeon buk	Jeon nam	Kyung buk	Kyung nam	Jeju
Metro politan area	92.08	0.04	0.25	2.09	0.41	0.18	0.16	0.53	0.57	0.99	1.11	0.18	0.87	0.51	0.05
Busan	1.13	87.28	0.31	0.10	0.00	0.36	1.35	0.00	0.05	0.77	0.09	0.25	0.27	8.04	0.00
Daegu	0.85	0.01	89.10	0.00	0.00	0.00	0.02	0.07	0.00	0.00	0.00	0.00	8.63	1.31	0.00
In cheon	13.64	0.00	0.00	80.72	0.19	0.00	0.73	0.00	0.00	4.59	0.14	0.00	0.00	0.00	0.00
Gwang ju	3.92	0.00	0.00	0.00	80.42	0.00	0.00	0.00	0.00	0.00	0.20	14.10	0.00	1.36	0.00
Dae jeon	0.59	0.00	0.00	0.00	0.00	87.69	0.00	0.00	0.70	0.00	0.98	0.23	0.00	0.33	0.00
Ulsan	0.96	1.20	2.15	0.00	0.00	0.00	90.57	0.00	0.00	0.00	0.00	0.00	1.65	3.47	0.00
Gang won	5.56	0.00	1.58	0.26	0.00	2.58	0.00	80.98	9.04	0.00	0.00	0.00	0.00	0.00	0.00
Chung buk	3.11	0.00	0.00	0.00	0.00	2.51	1.74	0.22	89.99	1.94	0.29	0.00	0.21	0.00	0.00
Chung nam	10.38	0.00	0.00	0.16	0.00	4.63	0.00	0.00	0.00	83.46	1.09	0.28	0.00	0.00	0.00
Jeon buk	3.05	0.00	0.00	0.61	0.40	0.59	0.53	0.06	0.17	0.05	94.15	0.40	0.00	0.00	0.00
Jeon nam	5.05	0.00	0.00	0.00	3.47	0.00	0.00	0.00	0.00	0.00	0.60	89.17	0.00	1.71	0.00
Kyung buk	0.96	0.51	3.58	0.00	0.10	0.00	0.20	0.00	0.00	0.45	0.00	0.00	92.72	1.48	0.00
Kyung nam	2.74	3.90	0.49	0.00	0.12	0.00	0.26	0.00	0.00	0.00	0.00	0.04	0.00	92.45	0.00
Jeju	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100

Table 1. The relationship between stroke occurred area and treated area in the acute stage (%)

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Treated Area Occurred Area	Metro politan area	Busan	Daegu	In cheon	Gwang ju	Dae jeon	Ulsan	Gang won	Chung buk	Chung nam	Jeon buk	Jeon nam	Kyung buk	Kyung nam	Jeju
Metro politan area	94.64	0.26	0.30	1.28	0.40	0.22	0.00	0.57	0.20	0.63	0.21	0.16	0.19	0.65	0.29
Busan	1.10	92.52	0.00	0.00	0.70	0.00	0.28	0.06	0.00	0.00	0.00	0.00	0.02	5.32	0.00
Daegu	0.93	0.00	90.45	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.00	0.00	7.69	0.29	0.00
In cheon	4.57	0.00	0.00	95.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gwang ju	3.22	0.00	0.33	0.00	89.25	0.00	0.00	0.00	0.00	0.06	0.16	6.97	0.00	0.00	0.00
Dae jeon	0.36	0.07	0.00	0.00	0.00	93.60	0.00	0.00	1.18	4.59	0.18	0.00	0.00	0.01	0.00
Ulsan	0.22	0.09	0.00	0.00	0.00	0.00	91.32	4.34	0.00	0.00	0.00	0.00	0.00	4.03	0.00
Gang won	4.06	0.15	0.00	0.06	0.00	0.00	0.10	95.50	0.13	0.00	0.00	0.00	0.00	0.00	0.00
Chung buk	3.74	0.52	0.07	0.00	0.00	0.50	0.00	0.86	93.55	0.00	0.71	0.00	0.00	0.05	0.00
Chung nam	4.98	0.00	0.00	0.28	0.00	0.81	0.00	0.00	0.05	93.83	0.05	0.00	0.00	0.00	0.00
Jeon buk	1.58	0.00	0.00	0.03	0.78	0.00	0.02	0.00	0.00	0.92	95.84	0.82	0.00	0.00	0.00
Jeon nam	0.91	1.11	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	1.94	89.30	0.09	1.15	0.00
Kyung buk	0.70	0.08	2.18	0.33	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	96.69	0.00	0.00
Kyung nam	0.43	4.14	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	95.29	0.00
Jeju	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100

Table 2. The relationship between stroke occurred area and treated area in the acute stage (%)