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Original Research

Clinical characteristics of obstetrics and gynecology patients from other clinics who transferred through a referral center to a tertiary university hospital

Tae-Hee Kim[1], Soo-Ho Chung[1], Hae-Hyeog Lee[1,*]

[1]Departments of Obstetrics and Gynecology, Soonchunhyang University College of Medicine, 14584 Bucheon, Republic of Korea
*Correspondence: hhl22@schmc.ac.kr; hhl22@chol.com (Hae-Hyeog Lee)
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Abstract

Background: Referral centers are important for tertiary university hospitals to receive patients from other clinics. However, no data are available about the clinical characteristics of patients transferred through a transfer center, particularly obstetrics and gynecologic patients. **Methods**: We conducted a retrospective study of patients transferred from local clinics through a referral center to our tertiary university hospital between 1 January 2011 and 31 December 2011. One nurse and one doctor evaluated the medical charts. We excluded patients who transferred to the emergency room from other clinics. **Results**: A total of 249, 842, 93, and 76 patients were seen for diagnosis, management, operation, and delivery. Six patients received no recommendation from local clinics. A total of 178 patients were admitted and operated on the same day. **Conclusions**: The Korean government does not require that patients go to tertiary center by law, and it is advantageous that patients can choose their hospital. But a patient's needs and the primary and secondary clinic's requirements for transferring patients should be evaluated and considered in a multicenter study, and the role of the referral center should be remodelled accordingly.

Keywords: Delivery of health care; Patient transfer; Referral and consultation

1. Introduction

The republic of Korea introduced a health care delivery system in 1989, and all citizens have universal coverage. Subsequently, Republic of Korea divided all hospitals into primary, secondary, and tertiary hospitals. However, the Korean government eliminated the medical management system in 1998. As a result, patients increasingly present to urban tertiary university hospitals. The current regulations state that Korean patients can be seen by any doctor at any hospital other than at a tertiary center. Patients who want to be seen at a tertiary hospital must have a transfer note from another clinic, although these are easy to obtain from local clinics [1]. Since 1990, tertiary hospitals have opened their own referral centers near regional, alumni hospital, primary, and secondary hospitals [2]. Referral centers are important for tertiary university hospitals to receive patients from other clinics. However, no data are available about the clinical characteristics of patients transferred through a referral center, particularly obstetrics and gynecologic patients. Referral centers are not controlled by the government but by hospitals. Thus, it is very important to identify the clinical characteristics of transferred patients to define the role of the referral center [3].

The republic of Korea is famous for its government-controlled medical insurance system [4]. The system for transferring patients between tertiary and primary and secondary hospitals is free, and patients can choose their hospital. Our data were collected for a referral center system in a Korean urban area. The clinical characteristics of the patients in the referral center may provide clues for reorganising the delivery of health care.

2. Materials and methods

We conducted a retrospective study of patients transferred from local clinics through a referral center to our tertiary university hospital between 1 January 2011 and 31 December 2011. One nurse and one doctor evaluated the medical charts. We excluded patients who transferred to the emergency room from other clinics. Our tertiary university hospital has almost 1000 hospital beds for a population of 1,000,000 inhabitants in Bucheon city. We evaluated total admissions, outpatients, and transferred patients. The referral center was open between 8 AM and 5 PM Monday through Friday and from 8 AM to 12 PM Saturday. The IRB approval number was SCHBC-IRB 2012-75 at Soonchunhyang University Bucheon hospital.

3. Results

In total, all departments of the transfer center handled 26,650 patients from local clinics during the study period, and 1266 were obstetrics and gynecology patients. Thus, almost 5% of the patients received obstetric and gynecological care.

The total number of obstetrics and gynecology inpatients was 2817, and 24,346 were out-patients including transfer patients (Table 1). A total of 222, 254, 218, 244, and 206 patients were transferred on Monday–Friday. A total of 124, 102, 113, 104, 96, 112, 117, 121, 125, 119, 99, and 34 patients were transferred in January-December. There were 5, 40, 230, 437, 294, 139, 54, 53, 12, and one patient aged infant to 10 years, in their teens, and in their 20s, 30, 40s, 50s, 60s, 70s, 80s, and 90s. In total, 1122, 110, and 34 patients visited primary clinics and secondary and tertiary centers, respectively. According to the transfer notes, the reasons for transferring the patients included the need for an exact diagnosis, patient management, surgery, or delivery. Surgery and delivery referred to recommendations from a local clinic that the patient be transferred for an operation or delivery. A total of 249, 842, 93, and 76 patients were seen for diagnosis, management, operation, and delivery, respectively. Six patients received no recommendation from local clinics. The medical problems were hypertension (55 patients), diabetes mellitus (20 patients), thyroid disease (11 patients), hepatitis B virus carrier (10 patients), asthma (seven patients), angina pectoralis (four patients), tuberculosis (one patient), depression (one patient), schizophrenia (one patient), and end-stage renal disease (one patient). The duration of admission was $<$10 days in 540 patients, 10~20 days for 83 patients, $>$20 days in nine patients, and $>$1 month for 25 patients. Diagnoses were confirmed by our clinics based on final pathological findings after surgery, radiological modalities, and laboratory findings. The five most prevalent diseases in obstetrics were preterm labour (42 patients), premature rupture of membranes (38 patients), preeclampsia (28 patients), placenta previa (25 patients), and uterine myoma (10 patients). Gynecological diseases including cancer or precancers were observed in 928 patients, and 910 were managed. The precancerous lesions included ASC-H (eight patients), atypical squamous cells of undetermined significance ASCUS (49 patients), carcinoma *in situ* (56 patients), cervical cancer (24 patients), HSIL (13 patients), and low-grade squamous intraepithelial lesions LSIL (19 patients). Twenty-four and 168 patients underwent operations for adenomyosis and uterine myoma. Seven patients had ovarian cancer requiring further study, and 149 had an ovarian mass requiring surgery. Ten patients had endometrial cancer requiring further study, and 14 had endometrial hyperplasia. A pelvic mass of unknown origin occurred in 24 patients. Thirty-seven patients had abdominal pain including pelvic inflammatory syndrome, and 10 had a pelvic prolapse. A total of 178 patients were admitted and operated on the same day.

4. Discussion

The inter-hospital transfer system differs among countries based on the healthcare system. Our hospital is a tertiary university center that serves 1 million citizens. In the obstetrics field, patients with preterm labour were transferred first. In the gynecologic field, patient suspected of cervical cancer of the uterus or a precancerous region in the uterine cervix was transferred from other clinics. Other prevalent gynecologic diseases included uterine adenomyosis or adenomyosis requiring surgery. Patients in their 30s were the group most commonly transferred. No difference in the number of transferred patients by day of the week was observed except Saturday. November and December were the months with the fewest patients transferred. We presumed that women did not want to visit the hospital during November and December because of the national academic aptitude test for their children. Operations for uterine disease and preterm labour were common. Thus, the referral center in a tertiary hospital such as ours requires the equipment to manage an operation or preterm delivery in patients from other clinics.

Since 2000, all health insurance companies have been united into a single National Health Insurance Program [5]. But referral centers and the transfer system depend freely on the hospitals. Expenditures for medical management are an important issue worldwide. The Ministry of Health and Welfare in Republic of Korea has tried to reduce inefficient repetitive medical management expenditures. We think that an important next step is to regulate the inter-hospital transfer system, which would reduce medical management expenditures and patient inconvenience. However, no reports are available about the inter-hospital referral center system for obstetrics and gynecology. Other inter-hospital transfer systems are associated with the emergency room and nursing intensive care system.

Emergency transfer is an important and critical focus to save patients. But the role of the referral center should be evaluated, and the factors that require transfer from primary and secondary clinics to a tertiary center should be analysed. Korean patients can go to a doctor at anytime and anywhere with a transfer note from any hospital. The transfer system in Korea may be a possible focus to induce patients to come to other clinics because the referral system is not controlled by the government but by hospital relationships and patients' choice.

Most private medical facilities are located in urban areas in Republic of Korea, and about 90% of physicians are concentrated in cities, whereas 80% of the population lives in urban areas [5]. The issue in the United States of America is that patients spend more on healthcare than other developed countries but receive less financial coverage for health service. However, Republic of Korea does not focus on the issue of health insurance coverage [6]. The Korean healthcare system must reduce healthcare expenditures, which are rising relatively rapidly, consider the unequal distribution of providers between urban and rural hospitals, and reduce the frequency with which simplest procedures are performed at tertiary facilities [7].

Table 1. The clinical characteristics of patients transferred.

The characteristics of transferred patients	Department of obstetrics and gynecology			Total
Transferred patient	1266			26,650
	Inpatient	Outpatient		
Department of obstetrics and gynecology	2817	24,346		27,163
	Diagnosis	Management	Operation	Delivery
Transferred patient	249	842	93	76
Duration of admission	Transferred patient			
<10 days	540			
10 to 20 days	83			
>20 days	9			
>1 month	25			
Prevalent disease	Transferred patient			
Preterm labor	42			
Premature rupture of membrane	38			
Preeclampsia	28			
Placenta previa	25			
Gynecologic disease	Transferred patient			
Atypical squamous cells of undetermined significance (ASCUS)	49			
Carcinoma *in situ*	56			
Cervical cancer	24			
Leiomyoma, adenomyosis	168			
Ovarian cancer	7			
Ovarian mass	149			
Endometrial cancer	10			
Pelvic inflammatory syndrome	37			
Pelvic organ prolapse	10			

Our study had some limitations. Our data are not representative of all of Republic of Korea, as we only considered an urban area and we used retrospective databases. We excluded patients who presented at the emergency room. Our hospital offers surgery at any time, if patients are healthy enough for general or spinal anaesthesia. Thus, an operation or delivery and admission are possible 24 hours a day for transferred patients. This study was based on our hospital trends, which may not be common in other Korean urban tertiary center hospitals. Not all diseases were transferred to tertiary centers such as our hospital through the referral center, and we could not evaluate how many patients chose our hospital on their own.

5. Conclusions

The Korean government does not require that patients go to tertiary centers by law, and it is advantageous that patients can choose their hospital. However, a referral request due to medical necessity and restrictions may be necessary, and in particular, a power referral request related to obstetrical problem may be absolute. A patient's needs and the primary and secondary clinic's requirements for transferring patients should be evaluated and considered in a multicenter study, and the role of the referral center should be remodelled accordingly.

Author contributions

SHC—wrote the manuscript and organized data. THK—wrote the work and design the conception. HHL—wrote the work and plan and manuscript edit. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript.

Ethics approval and consent to participate

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of Soonchunhyang University Bucheon hospital (approval number: SCHBC-IRB 2012-75).

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Conflict of interest

The authors declare no conflict of interest.

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