A New Experimental Study on the Management of Medical Information for the Mitigation of Dysphagia

Seong-Ran Lee*
*Dept. of Medical Information, Kongju National University
e-mail:leesr@kongju.ac.kr

연하곤란 완화를 위한 의료정보관리의 새로운 실험적 연구

이성란*
*공주대학교 의료정보학과

Abstract

The paper is to conduct a new experimental study of medical information management for the mitigation of dyspepsia. The subjects of the study were 68 patients who visited the internal medicine department of a general hospital in K area from September 6 through November 12, 2021. The comparison before and after the medical information management of patients with swallowing difficulties was performed by the T-test. Symptoms of swallowing difficulty were measured as 7, 14, 28, and 32 days before and after medical information management application. The results of this study are as follows. Firstly, difficulties in eating food significantly decreased after application than before medical information management was applied($t=6.29$, $p<.05$). Secondly, difficulty swallowing food tended to decrease 7 days after the application of medical information management. Through the results of this study, the application of medical information management was effective in alleviating the difficulty of swallowing food. These findings are expected to contribute to alleviating food disorders in the future

1. lntroduction

Food usually passes easily from the esophagus to the stomach. Phagia is called tenderness when the food gets stuck in the middle and doesn't go down any more[1]. Dysphagia can be caused by mechanical stenosis of the pharynx or motility disorders that control the muscles. If swallowing difficulties progress slowly, people should keep in mind the possibility of esophageal cancer[2]. Neurological causes include stroke, Parkinson's disease, dementia, and severe work force. If solid currents get caught in the airways, suffocation may occur[3]. Malnutrition can occur if sufficient nutrition is not available due to food difficulties. Therefore, this study is to conduct a new experimental study of medical information management to alleviate difficulties.

2. Materials and Methods

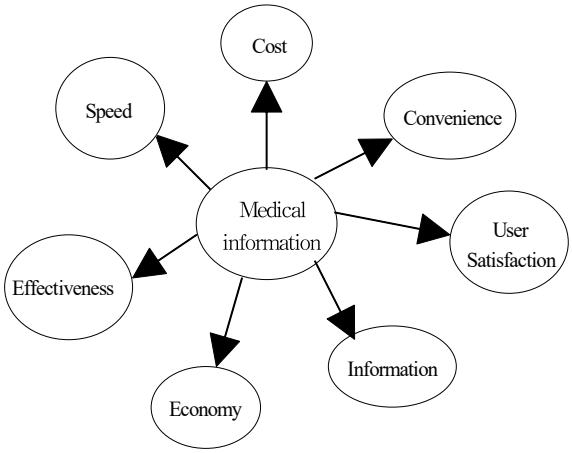
2.1 Materials

The subjects of the study were 68 patients who visited the internal medicine department of a general hospital in K area from September 6 through November 12, 2021. Figure 1 shows the elements of medical information management to treat swallowing difficulties. It has excellent characteristics such as information, effectiveness, speed, convenience and user satisfaction.

2.2 Methods

The comparison before and after the medical information management of patients with swallowing difficulties was performed by the T-test. Symptoms of swallowing difficulty were measured as 7, 14, 28, and 32 days before and after medical information management application.

The experimental group is classified as the group that applied medical information management, and the control group is classified as the group that did not apply medical information management.



[Fig. 1] Elements of Medical Information Management to Treat Swallowing Difficulties

3. Results

3.1 Before and after the application of medical information management for the treatment of dysphagia

Table 1 shows before and after the application of medical information management for the treatment of dysphagia. The feeling of food sticking to a person's throat decreased significantly after application compared to before medical information management application($t=3.84$, $p<.05$). Difficulties in eating food significantly decreased after application than before medical information management was applied($t=6.29$, $p<.05$).

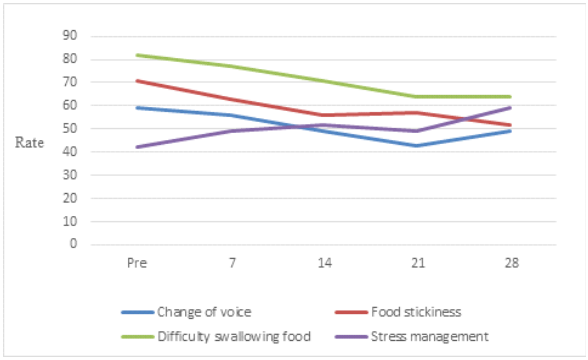
[Table 1] Before and after the application of medical information management for the treatment of dysphagia

Variables	Before	After	t
Nutritive conditions	21.64±1.38	34.09±1.52	-1.46*
Wrong pipe	28.24±3.19	20.74±2.76	5.27
Feeling food flowing back through the nose	39.16±1.42	32.81±0.48	2.29
Feeling of food sticking to a person's throat	45.82±0.37	32.95±0.94	3.84*
Difficulty in eating food	42.59±2.41	31.76±3.46	6.29*
Brain function problems	31.06±0.57	27.18±0.92	4.07
Insomnia	36.84±1.68	29.42±0.59	1.84
Stress management	42.49±3.93	28.38±0.64	6.29*
Small intake of food	25.17±0.19	42.63±0.27	2.72**
Putting people's hair up at bedtime	36.81±0.75	48.25±0.91	6.25*

* $p<.05$ ** $p<.01$

3.2 Changes in Dysphagia with Time

Figure 2 shows the change before and after the application of medical information management according to the time lapse of the symptoms of dysphagia. Difficulty swallowing food tended to decrease 7 days after the application of medical information management. However, the difficulty of swallowing food has not changed since 21 days after the application of medical information management.



[Fig. 2] Changes in Dysphagia with Time

4. Discussion

This study is to conduct a new experimental study of medical information management for the mitigation of dyspepsia. As a result, food case feelings in the human throat were significantly reduced after application compared to before medical information management application. This study showed similar results to the swallowing disorder of food in previous study[2],[4]. Patients with dyspepsia should eat a small amount of soft food at a regular basis. Soft foods with a lot of moisture are good for treating food intake difficulties.

In this study, the difficulty of eating decreased after application than before medical information management was applied. This is a similar result to food swallowing difficulty in previous studies[5],[6]. Inflammation of the pharyngeal muscles can cause symptoms of dyskinesia. Gargle with salt water is recommended to prevent inflammation of the pharynx. Through the results of this study, the application of medical information management was effective in alleviating the difficulty of swallowing food. These findings are expected to contribute to alleviating food disorders in the future

References

[1] M. Sobol, M. Anna, Kober, M, Ewelina, S. Badurek,

"The Dysphagia Handicap Index (DHI)—Normative Values. Systematic Review and Meta-Analysis", Dysphagia, Vol 36, No. 6, pp. 1-5, 2021.

[2] C. John. O'Horo, N. R. Pulia, L. G. Arguello, J. Robbins, N. Safdar, "Bedside Diagnosis of Dysphagia: A Systematic Review", Journal of Hospital Medicine, Vol. 10, No. 4, pp. 256-265, 2015

[3] L. Sura, A. Madhavan, G. C. Michael, A. Crary, "Dysphagia in the Elderly : Management And Nutritional Considerations", Clinical Interventions in Aging, Vol. 7, pp. 287-281, 2012.

[4] A. Y. Julie, L. Cichero, M. Peter, C. Steele, H. Ben, C. Jianshe, O. Roberto, Dantas, D. Janice, K. Jun, L. Caroline, M. Joseph, P. Mershen, R. Luis, S. Soenke, "Development of International Terminology and Definitions for Texture-Modified Foods and Thickened Fluids Used in Dysphagia Management: The IDDSI Framework", Dysphagia, Vol. 32, No. 2, pp. 293-314, 2017.

[5] W. Kenneth, Altman, Y. Gou-Pei, Steven, D. Schaefer "Consequence of Dysphagia in the Hospitalized Patient: Impact on Prognosis and Hospital Resources", Archives of Otolaryngology-Head & Neck Surgery, Vol. 136, No. 8, pp. 784-788, 2010.

[6] W, Rainer, D. Rainer, M. B. Anne, C. Pere, H. Shaheen, J. H. Hans, L. Susan, H. L. Andreas, M. Rosemary, P. Petra, R. Alexander, S. Reza, W. C. Tobias, S. Christian, V. Dorothee, "Oropharyngeal Dysphagia in Older Persons From Pathophysiology to Adequate Intervention: A Review and Summary of An International Expert Meeting". Clinical Interventions in Aging, Vol. 11, pp. 189-208, 2016.