

Compliance Evaluation of Clinical Pathway Implementation in Ischemic Stroke Patients at PKU Muhammadiyah Gamping

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ABSTRACT

Background: Ischemic Stroke is a health problem that needs special attention. Clinical pathway implementation needs to be done in ischemic stroke patients, in order to create service costs and cost efficiency.

Objective: To determine the implementation, compliance, and obstacles that faced by medical personnel in the implementation of the clinical pathway of ischemic stroke at PKU Muhammadiyah Gamping Hospital

Method: This research using mixed method, with sequential explanatory design, for ischemic stroke patients. Research informants are two neurologist who handle stroke patients, and two medical committee members. Data collection was carried out with medical record documentation and interviews. This research used descriptive and qualitative analysis techniques.

Results: Implementation of clinical pathways of ischemic stroke in good category, namely 28 respondents (52.8%). Respondents compliance related to the clinical pathways of ischemic stroke were also included in the non-adherent category, which was carried out on 39 patients (73.6%).

Conclusion and Suggestion: Implementation of clinical pathways of ischemic stroke is in good category. Compliance with the clinical pathways of ischemic stroke is also included in the non-compliance category. The constraints in the implementation of clinical pathways is ischemic stroke is an initial diagnosis not an ischemic stroke or the symptoms are not clear; and lack of audit and clinical evaluation; there are no special stroke units. Efforts to carry out these examinations are carried out through the implementation of clinical pathways and the need to establish special stroke units. In this regard, audits and clinical evaluations can be carried routinely.

Keywords: Implementation, Compliance, Clinical Pathways, Ischemic Stroke

Introduction

The implementation of clinical pathway is one of the way in realizing the purpose of hospital accreditation in improving patient safety in hospital by improve protection for the patient, community and hospital resources.¹ Another reason behind the implementation of clinical pathway is the application of National Health Insurance system (JKN) which has been implemented since January 2014 by the health insurance management agency (BPJS). The Ministry of Health has established Permenkes number 69, 2013 about Standard Cost of Health Services in First-Level Health Facilities and Advanced Health Facilities. The national health insurance management agency (BPJS) will pay to the first-level health facility with a capitation system and for the advanced referral health facility using the Indonesian Based Groups (INA-CBG's) package system.²

The information collection and analysis from the variation of clinical pathways implementation is important to do. To provide useful and accurate information in patient care and to encourage members of the multidisciplinary team in health services that consist of health practitioners to obey the guidelines and standards in the clinical pathway. Analysis of variations in the implementation of clinical pathways can be used as an evaluation tool in aspects of patient care and improve the quality of health services that can be carried out continuously to reflect the best care nowadays.³

Clinical pathway, one of them is performed on ischemic stroke. Stroke is a health problem that needs special attention and can attack anyone and at any time, regardless of race, gender, or age. Neurologist at the Premier Hospital of Jatinegara, Sukono Djojoatmodjo said the problem of stroke is increasingly important and urgent because now the number of stroke patients in Indonesia is the

highest and first rank in Asia and fourth rank in the world, after India, China and America. Based on the latest data and results of Basic Health Research 2013², stroke is the leading cause of death in Indonesia. The prevalence of stroke in Indonesia based on a diagnosis of health personnel is 7.0 per mile and based on a diagnosis of health personnel or symptoms is 12.1 per mile. Thus, as many as 57.9 percent of stroke diseases have been diagnosed by medical practitioner. The definition of stroke according to the World Health Organization (WHO) is clinical signs that develop rapidly due to focal (or global) brain function disorders, with symptoms lasting 24 hours or more, can cause death, without any other cause than vascular.⁴

Stroke prevalence based on medical practitioner's diagnosis and the highest symptoms is in South Sulawesi (17.9%), DI Yogyakarta (16.9%), Central Sulawesi (16.6%), followed by East Java at 16 per mile. There is an increasing in stroke prevalence based on interviews (the answers from respondents who had been diagnosed by medical practitioner and the symptoms) also increased from 8.3 per 1,000 (2007) to 12.1 per 1,000 (2013).²

PKU Muhammadiyah Gamping Hospital sets five priority areas for diseases including internal diseases, surgery, pediatric diseases, obsgyn, and neurological disease. Along with the course of service, it is necessary to monitor and evaluate the implementation of clinical pathways that have been carried out, one of them is ischemic stroke, so that excellent service is always created at an efficient cost.

METHOD

This study is a mixed method research, with sequential explanatory design. The subjects were all patients with ischemic stroke treated in

September 2015-November 2015 at PKU Muhammadiyah Gamping Hospital. The research informants were neurologists who treat ischemic stroke patients, and medical committee members, which is taken by purposive sampling. Data collection was carried out with medical record documentation and interviews. The data were analyzed using quantitative and qualitative descriptive techniques.

RESULT AND DISCUSSION

A. Patient's Characteristic

Based on the results of the study, patient characteristics described in table 1.

Table 1

Patient's Characteristic			
No.	Characteristic	f	%
1.	Gender		
	a. Man	30	56,6
	b. Female	23	43,4
	Total	53	100,0
2.	Age		
	a. ≤ 40 years old	2	3,8
	b. 41 – 50 years old	5	9,4
	c. 51 – 60 years old	13	24,5
	d. 61 – 70 years old	14	26,4
	e. 71 – 80 years old	12	22,6
	f. > 80 years old	7	13,2
	Total	53	100,0
3.	Duration of treatment		
	a. ≤ 4 days	12	22,6
	b. > 4 days	41	77,4
	Total	53	100,0

Table 1 shows that the patient's characteristics based on gender, mostly men, were 30 respondents (56.6%). Based on age, the majority of respondents were 61-70 years old, namely 14 respondents (26.4%), and at least ≤ 40 years, namely 2 respondents (3.8%). Based on the length of treatment, most of them > 4 days, namely 41 respondents (77.4%).

B. Implementation of Ischemic Stroke Clinical Pathway Application

In order to obtain a clearer descriptive, a description of each action is taken. The actions taken in the ischemic strokes clinical pathway are something to be done and there are actions that can not be done. The description of the application of ischemic stroke clinical pathway that must be done described in the table as follows:

Table 2

Description of Implementation of Ischemic Stroke Clinical Pathway Application that Must Be Done

No.	Implementation of Clinical Pathway Application	f	%
1.	Routine blood test		
	a. Yes	51	96,2
	b. No	2	3,8
	Total	53	100,0
2.	Blood sugar test		
	a. Yes	42	79,2
	b. No	11	20,8
	Total	53	100,0
3.	Head CT Scan		
	a. Yes	39	73,6
	b. No	14	26,4
	Total	53	100,0
4.	Aspilet administration		
	a. Yes	24	45,3
	b. No	29	54,7
	Total	53	100,0
5.	Simvastatin administration		
	a. Yes	27	50,9
	b. No	26	49,1
	Total	53	100,0

Table 2 shows that routine blood tests were performed on 51 patients (96.2%). Examination blood sugar was performed on 42 patients (79.2%). Head CT scan was performed on 39 patients (73.6%). The administration of aspirin was carried out in 24

patients (45.3%). The administration of simvastatin was carried out in 26 patients (49.1%).

Description of the ischemic stroke clinical pathway application that can or can not be available, described in the table as follows:

Table 3. Description of Implementation of Ischemic Stroke Clinical Pathway Application that can or can not be done

Implementation of			
No.	Clinical Pathway Application	f	%
1.	Renal function test		
	c. Yes	40	75,5
	d. No	13	24,5
	Total	53	100,0
2.	Thorax x-ray		
	c. Yes	34	64,2
	d. No	19	35,8
	Total	53	100,0
3.	Piracetam administration		
	c. Yes	12	22,6
	d. No	41	77,4
	Total	53	100,0
4.	Citicolin administration		
	c. Yes	20	37,7
	d. No	33	62,3
	Total	53	100,0
5.	Ondancetron administration		
	c. Yes	7	13,2
	d. No	46	86,8
	Total	53	100,0

Table 3 shows that examination of renal function was carried out in 40 patients (75.5%). Thorax xray was performed on 34 patients (64.2%). Piracetam was administered to 12 patients (22.6%). Citicolin was administered to 20 patients (37.7%). Ondancetron was administered to 7 patients (13.2%).

The benefits of using a clinical pathway while caring the patients in hospitals are every

intervention that is given and the patient's development is systematically based on the established time criteria and is expected to improve the quality of services and reduce hospital costs. The benefits of implementing a clinical pathway for patients and hospitals are to encourage doctors to implement it.

The benefits of implementing a clinical pathway to cost efficiency, service quality and outcome are evidenced by many studies. The study of Iroth, Ahmad, & Pinzon (2016) about impact of clinical pathway implementation on the cost of care for acute ischemic stroke patients in Bethesda Hospital, Yogyakarta, obtained results that the application of clinical pathway in the treatment of acute ischemic stroke in Bethesda Hospital Yogyakarta was able to significantly reduce maintenance costs, although does not make a significant difference to the duration of treatment or LOS. The application of CP also increases the effectiveness of drug administration in the treatment of acute ischemic stroke, in this case use better anti-patelet. The application of clinical pathway was proven significantly improve clinical outcomes after treatment of acute ischemic stroke better with the Modified Rankin Scale (MRS) scale.⁶

Pinzon et al (2009) study entitled Clinical Pathway in Acute Stroke Services: Does the Pathway Improve the Service Process?, obtaining the results of trials in 50 cases shows an improvement in tracking stroke risk factors, assessment of swallowing function, recording and completeness of follow-up sheets and nutrition consultation.⁷ Graeber et al (2007) study found that the implementation of clinical pathways reduced unnecessary actions and costs also increased patient satisfaction with the services performed.⁸

The benefits of clinical pathways on cost effectiveness, service quality and outcomes, form a positive attitude towards clinical pathways. This positive attitude is supported by the influence of colleagues. The influence of coworkers is quite strong considering the service to patients in the hospital involves many parties, such as doctors, nurses, nutrition and other parties. A positive attitude supported by the influence of colleagues, will shape positive behavior in the implementation of clinical pathways.

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This is suitable with reasoned action theory which states that attitudes influence behavior through a careful and reasoned decision-making process, and the impact is limited to three things. First, behavior is not only determined by a general attitude but by a specific attitude towards something. Second, behavior is influenced not only by attitudes but also by subjective norms, namely our beliefs about what other people want us to do. Third, attitudes towards a behavior together with subjective norms form an intention or intention to behave in a certain way.⁹

C. Compliance of Medical Personnels on Ischemic Stroke Clinical Pathway

In the ischemic stroke clinical pathway, there are mandatory activities and also activities that may or may not be conducted. In this study, the compliance of medical personnels on ischemic stroke clinical

pathway is reviewed by the number of mandatory activities that is done. If each of the activities is done, then it is categorized as compliant. The result is described in the table below:

Table 4
Description of Medical Personnels'
Compliance on Ischemic Stroke Clinical
Pathway

No.	Criteria	f	%
1.	Compliance	14	26,4
2.	Not Compliance	39	73,6
Total		53	100,0

Table 4 showed respondent on ischemic stroke clinical pathway is categorized as noncompliant to 39 patients (73,6). Based on this number, we conclude that compliance on ischemic stroke clinical pathway in PKU Muhammadiyah Gamping Hospital is categorized as noncompliant.

Based on the study result described in table 3, some activities that rarely implemented by doctors are the blood glucose examination (79,2%), head CT scan (73,6%), administration of aspilet (45,3%), and administration of simvastatin toward 26 patients (49,1%).

In the clinical pathway, the blood glucose examination and CT scan are mandatory on the first day. On the contrary, based on the interview with neurologis, many patients are referred from type D hospitals, hence the examinations already conducted in their previous hospital. If it is, the neurologis in PKU Muhammadiyah Gamping Hospital just have to assess the examination result. The other reason not to conduct CT scan examination on the first day is the incorrect early diagnosis. Patients are diagnosed with stroke when they showed neurological deficit on the following day, then CT scan

examination are conducted right after. The administration aspilet also based on CT scan result as it could worsen the bleeding. Simvastatin is also not mandatory because it is administered only if the patient needs a lipid profile examination.

D. Problems Encountered by Medical Personnels in the Implementation of Ischemic Stroke Clinical Pathway

Problems encountered by medical personnels in the implementation of ischemic stroke clinical pathway are analyzed in interviews with neurologist that taken care of ischemic stroke patients and medical committee staff in PKU Muhammadiyah Gamping Hospital.

The result of interview showed that clinical pathway is already based on medical standard and accurate to be applied in PKU Muhammadiyah Gamping Hospital. This means that there should be no problem, based on the clinical pathway itself, in the application to the ischemic stroke patients. The implementation of ischemic stroke clinical pathway are encountering problems as follow:

- a. Early diagnosis is not ischemic stroke or the symptoms are unclear, therefore some treatment can't be conducted in the first day as it should be.
- b. There is yet an audit and evaluation on the implementation of clinical pathway, hence no feedback from the management, moreover from the neurologist, about complications and the means to deal with them.
- c. Stroke Unit is not yet established and patients with stroke are treated in

general wards hence less optimal service.

The effort to resolve problems mentioned above is by conducting an audit on the implementation of clinical pathway and assembling stroke unit with a specially trained medical personnels for a more focused treatment of stroke patients.

Implementation of clinical pathway by doctors is a form of health behavior. Kurt Lewin concluded a behavioral relationship model which states that a behavior (B) is an individual characteristic function (P) and environment (E). Individual characteristic involves some variable such as motives, values, personality traits, and traits that interacting with each other followed by interaction with environmental factors in deciding a behavior. Environmental factors have a major influence in deciding a behavior, even at a times stronger than individual characteristic, hence making a behavior prediction more complicated.⁹

Based on the theory, the creation of a behavior is requiring an environmental involvement, other than individual characteristic. By the means on the implementation of clinical pathway, one of them is showed by the study of Mutiarasari, Pinzon, & Gunadi (2017) on the evaluation of development process and implementation of acute ischemic stroke clinical pathway in Anutapura Hospital, Palu. Results from this study found that the supporting factors in development process and implementation of new ischemic stroke clinical pathway trial are the synergy of all Hospital Management's aspects, involvement of Hospital's clinical champion, and active involvement of multidicipline team.¹⁰

Conclusion

Based on the study result and assessment, we may conclude some points as follow:

1. The implementation of ischemic stroke clinical pathway in PKU Muhammadiyah Gamping Hospital is categorized as good.
2. The compliance on ischemic stroke clinical pathway in PKU Muhammadiyah Gamping Hospital is categorized as noncompliant.
3. Problems occurred in the implementation of ischemic stroke clinical pathway in PKU Muhammadiyah Gamping Hospital are:
 - a. Early diagnosis is not ischemic stroke or the symptoms are unclear, therefore some treatment can't be conducted in the first day as it should be.
 - b. There is yet an audit and evaluation on the implementation of clinical pathway, hence no feedback from the management, moreover from the neurologist, about complications and the means to deal with them.
 - c. Stroke Unit is not yet established and patients with stroke are treated in general wards hence less optimal service.

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