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HUBUNGAN PELAKSANAAN *CLINICAL PATHWAY* TERHADAP LAMA RAWAT INAP DAN KEJADIAN FATAL PASIEN SINDROMA KORONER AKUT

IMPLEMENTATION OF CLINICAL PATHWAYS ON CLINICAL AND ECONOMIC OUTCOMES IN PATIENTS ACUTE CORONARY SYNDROMES (ACS) IN DR. SARDJITO GENERAL HOSPITAL YOGYAKARTA

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Abstrak

Sindrom Koroner Akut (SKA) merupakan penyakit kardiovaskuler yang utama menyebabkan kematian hingga tahun 2020. Tingginya angka morbiditas dan mortalitas pasien SKA maka diperlukan strategi yang meringkas standar tatalaksana terapi yang dikenal dengan *clinical pathway.* Penelitian ini bertujuan untuk mengetahui apakah terdapat hubungan pelaksanaan *clinical pathway* berdasarkan lembar penilaian *clinical pathway* terhadap lama rawat inap dan kejadian fatal pada pasien SKA.

Penelitian ini merupakan penelitian *cross sectional* pada pasien SKA (NSTEMI/STEMI) yang dirawat di ICCU RSUP Dr. Sardjito Yogyakarta. Bahan yang digunakan adalah catatan medik pasien SKA. Alat yang digunakan adalah lembar pengumpul data dan lembar penilaian *clinical pathway* SKA. Pengambilan data secara retrospektif (Februari – Juli 2014) dan prospektif (Agustus – September 2014). Subyek penelitian berjumlah 102 pasien yang terbagi 2 kelompok (49 pasien tanpa variasi dan 53 pasien variasi) berdasarkan pada lembar penilaian *clinical pathway*. Variasi diperoleh dari ketidaksesuaian berjumlah satu/lebih dari tatalaksana terapi pada lembar penilaian *clinical pathway* dalam 24 jam pertama perawatan di ICCU. Analisa data meliputi analisa hubungan lama rawat inap terhadap pelaksanaan *clinical pathway* pada kedua kelompok menggunakan uji *chi-square* dan analisa hubungan kejadian fatal (kematian, gagal jantung, stroke, dan *reinfark*) terhadap pelaksanaan *clinical pathway* pada kedua kelompok menggunakan uji *Fisher Exact Test*.

Hasil penelitian ini menunjukkan bahwa pelaksanaan *clinical pathway* yang berdasarkan lembar penilaian *clinical pathway* tidak terdapat hubungan terhadap lama rawat inap dan angka kejadian fatal pada pasien SKA (p>0,05) di ICCU Dr. Sardjito Yogyakarta dikarenakan lembar penilaian *clinical pathway* SKA kurang informatif dan secara umum tatalaksana terapi dalam 24 jam pertama telah sesuai dengan *clinical pathway* pasien SKA.

Kata Kunci : *Clinical Pathway*, Lama Rawat Inap, Kejadian Fatal, Sindroma Koroner Akut

Abstract

Acute Coronary Syndrome (ACS) is a cardiovascular disease that become a major cause of death until 2020. Standard strategy which summarize the treatment of therapy known as clinical pathways is required caused by the high rate of morbidity and mortality of patients with ACS. This study aimed to determine the relationship of the clinical pathways

implementation based on the clinical pathway assessment sheet to the length of stay and number of fatal events in patients with acute coronary syndrome (ACS).

This study was a cross sectional study in patients with ACS (NSTEMI/STEMI) treated in ICCU Hospital Dr. Sardjito. The materials used were ACS patient medical records. The tool used is a data collection sheet and clinical pathways assessment sheet. Making retrospective (February - July 2014) and prospective (August - September 2014). The research subjects are 102 patients were divided into 2 groups (49 patients without variation and 53 patients with variations) based on clinical pathways assessment sheet. Variations obtained from the discrepancy amounted to one/more of the therapeutic management of clinical pathways assessment sheet in the first 24 hours of treatment in ICCU. Data analysis includes analysis of long hospitalization relationship to the implementation of clinical pathways in the two groups using the chi-square test and analysis of the relationship number of fatal events (death, heart failure, stroke, and reinfarction) on the implementation of clinical pathways in the two groups using Fisher's exact test.

The results of this study indicate that the implementation of clinical pathways based on clinical pathways assessment sheet there is no relationship to the length of stay and the number of fatal events in patients with ACS ($p>0,05$) in ICCU Dr. Sardjito due ACS assessment sheet clinical pathways are less informative and general management of therapy within the first 24 hours in accordance with the patient's clinical pathways for ACS.

Keywords : Clinical Pathway, Length of Stay, Fatal of Events, Acute Coronary Syndrome

Introduction

Acute Coronary Syndrome (ACS) is one of main clinical manifestations of coronary heart disease (CHD) and major cause of death (Departemen Kesehatan, 2006). ACS consists of myocardial infarction with or without ST segment elevation is threatening disorders with morbidity and high mortality rate despite treatment of ACS procedures have been evolved (Kolansky, 2009). Globally in 2010, coronary heart diseases (CHD), one of them is ACS, became the first cause of death in developing countries, replacing the death due to infection. Estimation in worldwide, CHD in 2020 will became the first commonest killer which amounted to 36% of all deaths, the rate is two times higher than the death rate from cancer (Departemen Kesehatan, 2006).

Selection of drug therapy in the treatment of ACS among other anti-ischemic, anticoagulants, antiplatelet agents, thrombolytic, as well as other drugs such as ACE inhibitors and statins (Braunwald dkk., 2002). In addition to drug administration, guidance on emergency revascularization by the European Society of Cardiology mentions that revascularization given STEMI patients are emergency, while in patients with NSTEMI is urgency that revascularization can be performed within 24 hours and do not exceed the time from 72 hours after the episode of ACS (Windecker dkk., 2014).

Therapeutic management strategies in ACS patients that take place in an optimal management strategies, effective, and efficient is required because of the high rate of morbidity, mortality, and costs in patients with ACS (Departemen Kesehatan, 2006). Variation of the therapeutic management is needed because each patient has different conditions when the body reacts to

the drug and disease. But sometimes, the variation is not necessary so implementation of clinical pathways is needed (Rahma, 2013). Giving revascularization by percutaneous coronary interventionn (PCI) can improve clinical outcomes of ACS being able to reduce the mortality and morbidity rate (Blackman dkk., 2003).

Clinical pathways help patients with clinical or circumstances of a particular diagnosis through clinical experience or the desired outcome (Bor, 2011). Clinical pathways have been widely applied by health services in hospitals that one of its goals is to reduce variation in therapy based on pre-existing guidelines in order to improve the clinical outcome of patients with ACS (Rotter et al., 2010). The enactment of clinical pathways for patients with ACS in the RSUP Dr. Sardjito Yogyakarta needs an evaluation. One of this evaluation is analyzing the relationship of clinical pathways implementation based on the clinical pathways assessment sheet to length of stay and number of fatal events in patients with ACS in the ICCU RSUP Dr. Sardjito Yogyakarta.

This study aimed to determine the relationship of the clinical pathways implementation based on the clinical pathway assessment sheet to the length of stay and number of fatal events in patients with acute coronary syndrome (ACS).

Materials and Methods

This study was an analytical observational study with cross sectional design. Data were collected retrospectively in the month of February to September 2014 and prospectively in August-September 2014. Measurement of length of stay and number of fatal events done at one time during the study period and the relationship of variation clinical pathways implementation to the length of stay and the number of fatal events in patients with ACS were analyzed based on the clinical pathways assessment sheet. This research subjects are patients who are appropriate with the inclusion and exclusion criteria. Inclusion criteria are ACS patients in ≥18 years old and an exclusion criteria are patients with incomplete medical records and there are no clinical pathways assessment sheet of ACS during during hospitalization in ICCU RSUP Dr. Sardjito Yogyakarta. The research subjects are 102 patients with ACS were divided into 2 groups (49 patients in no variation and 53 patients in variation).

The variables of this study consists of the independent variables. They are ACS patients (STEMI or NSTEMI). Dependent variable is the clinical outcomes of patients consisting of the length of stay and the number of fatal events (hospital in-mortality, heart failure, stroke, and myocardial reinfarction). As for the external variables include patient characteristics (age, sex, risk factors, history of coronary heart disease (CHD), diagnostics, and drug use during the first 24 hours).

The data that have been taken were analyzed. Data analysis includes the analysis of the characteristics of ACS patients,

analysis of each stage of the implementation of clinical pathways in the two groups using the chi-square goodness-of-fit test, analysis of length stay relationship to the implementation of clinical pathways in the two groups using the chi-square test, and analysis of relationship between number of fatal events of clinical pathway implementation in both groups using the *Fisher Exact Test*.

Results and Discussion

1. Characteristic of Studies Objects.

Research subjects are dominated by men (82% in no variation and to 77% in variation) with the highest prevalence in the age group <60 years (61% in no variation and 57% in variation), has a risk factor of smoking is mostly done by males (68.63%), and had a diagnosis of STEMI (84% in no variation and 83% in variation). The whole basic characteristics of the study subjects have different value, but the basic characteristics of the two research subjects groups did not have a statistically significant difference value (p> 0.05). The most widely drugs that used by ACS patients within the first 24 hours are aspirin (81.37%), clopidogrel (81.37%), heparin (93.14%), atorvastatin (89.22%), captopril (77.45%), isosorbide dinitrate (ISDN) (83.33%), alprazolam (67.65%), and glycerin as a laxative (48.04%).

2. Clinical Pathway Implementation to Acute Coronary Syndrome Patients
   a. Implementation of Clinical Assessment

      Overall the implementation of both clinical assement on DPJP examination (doctor in charge of service) and a vital sign checks in clinical pathways assessment sheet does not have relevance in both groups of research subjects (p>0,05). The big difference in the number of both groups because the study subjects were 13 cases in the group variations in the patient's clinical pathways assessment sheet ACS there is no written reasons in DPJP examination column and 1 case in the assessment sheet on the column clinical pathways vital signs, after examination was made into the medical record patients this is due to the lack of signatures by DPJP so necessary communication between healthcare practitioners in documenting the treatment of therapy on clinical pathways ACS assessment sheets to support the implementation of clinical pathways in patients with ACS in ICCU Dr. Sardjito.

   b. Implementation of Supporting Investigation

      All of supporting investigation in this study have same value in both groups. Except for troponin I/CKMB, there were 3 cases that were

not conducted investigations of troponin I / T in the clinical pathways assessment sheet. But after a search of ACS patients medical records, there were an inspection sheet of troponin I and CKMB for patients within 24 hours of treatment when he first entered in the ICCU. Based on in this study, there is no good documentation on clinical pathways assessment sheet for patients with ACS.

c. Implementation of Therapy

Overall management of both the drug therapy and provision of revascularization in patients with acute coronary syndrome was based on clinical pathways assessment form does not have a statistically significant value by using chi-square goodness-of-fit test for two groups of study subjects (p> 0.05).

In subanalisis of revascularization in patients with STEMI are 85 subjects who had a diagnosis of STEMI; 27 patients (32%) do revascularization, this is in accordance with the standards/not vary, while as many as 58 patients (68%) did not do revascularization/variations either thrombolytic and PCI for treatment in ICCU is written in the patient record sheet of ACS. Given the type of revascularization with onset <6 hours is a thrombolytic (streptokinase) of 15 patients (56%), while revascularization with onset 6-12 hours is PCI as many as 12 patients (44%). Patients with ST-segment elevation ACS were not performed emergency revascularization by 52% had onset> 12 hours. A total of 8 patients (14%) of the patients were not given the current emergency revascularization treatment in ICCU during the first 24 hours because have gained previous revascularization in health care that is as much as 5 patients had onset <6 hours with thrombolytic and 3 patients had onset> 12 hours with PCI.

3. Length of Stay of Acute Coronary Syndrome Patients

Distribution of length of stay of ACS patients in this study are divided into 2 groups: <5 days and> 5 days. The division of this group is based on the average length of stay (5.54 days ± 3.01 days) in ICCU RSUP Dr. Sardjito Yogyakarta. This study indicate that the length of stay group <5 days is higher (57%) than the group with length of stay > 5 days (43%), both are with no variation or with variation. The results of statistical analysis in this study shows that length of stay is not affected by the implementation of clinical pathways in patients with ACS in ICCU RSUP Dr. Sardjito Yogyakarta (p> 0.05). It is caused by most of the therapeutic management of patients with ACS in ICCU RSUP Dr. Sardjito Yogyakarta are accordance with clinical pathways that have been

agreed. It makes the length of stay that required by ACS patients in ICCU RSUP Dr. Sardjito Yogyakarta is short.

The existence of an emergency revascularization in patients with STEMI from study subjects showed that patients with revascularization / without variation) more has length of stay <5 days (67%), whereas in patients with STEMI without revascularization / variations have more length of stay> 5 days (52%). Analysis of revascularization on length of stay have different values are statistically significant (p> 0.05) were statistically tested using the chi-square test.

4. Number of Fatal Events of Acute Coronary Syndrome Patients

Implementation of clinical pathways on the number of fatal events in this study indicate there is no significant difference (p>0.05), so that the number of fatal events in this study were not affected by the implementation of clinical pathways in patients with ACS in the ICCU RSUP Dr. Sardjito Yogyakarta. It caused by clinical pathways assessment sheets are used as a tool in this study does not provide sufficient information clearly. Beside that, the management of therapy in this study, especially the treatment of therapy within the first 24 hours, have been in accordance with the clinical pathway for ACS patients that has been agreed by mustidispliner in the department of health RSUP Dr. Sardjito Yogyakarta.

Prior research, revascularization by PCI can reduce the number of fatal events (death, stroke, myocardial reinfarction) in STEMI patients by 2.7% compared to STEMI patients who did not get PCI revascularization which amounted to 6.5% (p=0.039) (Bench dkk., 2013). Due to without revascularization of the fatal incident in STEMI patients as a whole has a number greater than STEMI patients given the kemtian revascularization (9%), heart failure (3%), stroke (2%) and reinfarction (3%), but do not have different values are statistically significant between patients who received revascularization with patients who did not receive revascularization (p>0.05) were tested using the statistical test of *Fisher Exact Test*.

Conclusion

Based on the results of this study, it can be concluded that there is no relationship between clinical pathways implementation based on the clinical pathway assessment sheet to the length of stay and the number of fatal events in patients with ACS.

In subanalisis, emergency revascularization in patients with STEMI has long hospitalization <5 days (67%), while the STEMI patients without revascularisation have length of stay > 5 days (52%). A Fatal event rates without revascularisation in STEMI were greater, amounting to 9% for mortality, 3% for heart failure, 2% for stroke and 3% for the occurrence of reinfarction, whereas STEMI with revascularization just inflict death (4%).

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