Research Article

Morbidity Occurs to a Fifth of Referred Post Partum Hemorrhage Cases

Morbiditas terjadi pada Seperlima Kasus Rujukan Perdarahan Pascapersalinan

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Abstract

Objective: To assess maternal morbidity (five scoring system) and mortality of referred post partum hemorrhage (PPH) in Dr. Cipto Mangunkusumo Hospital period 2008-2010 and to identify its related factors.

Method: Retrospective study with cross sectional design for referred obstetric cases in RSCM period 2008-2010. Analysis of relation was conducted to these data using Chi-square or Fisher test with SPSS 17.0.

Result: There were 10,752 referred obstetrics cases in RSCM from 2008-2010, the three most common cases were severe preeclampsia, premature rupture of membrane, and preterm labour. The rate of referred cases of PPH in RSCM from 2008-2010 was 2%. There were 44 cases (20.5%) suffering morbidity (five scoring system) and 3 cases ending in mortality (1.4%) from all PPH referral cases. Mortality to morbidity rate for referred PPH cases in RSCM was 6.81% (3/44) with case/fatality ratio 14.7: 1. Variables that related to morbidity were age and referral factors (midwife). There were no relation between parity, education background, pay of services, occupation, type and etiology of PPH with morbidity due to PPH. Mortality assesment for 3 PPH referred cases would be descriptive.

Conclusion: The proportion of referred PPH cases in RSCM 2008-2010 was 2%, of which 20.5% classified as morbid and 1.4% was classified as mortal cases. Variables related significantly to morbidity were age and referral factors.

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Keywords: five scoring system, maternal morbidity, maternal mortality, referred cases of PPH

Abstrak

Tujuan: Mengetahui kejadian morbiditas (berdasarkan five scoring system) dan mortalitas pada kasus rujukan perdarahan pascapersalinan (HPP) di RSCM tahun 2008-2010 dan faktor-faktor yang memengaruhinya.

Metode: Studi retrospektif dengan desain potong lintang pada kasus-kasus obstetrik rujukan ke RSCM periode 2008-2010. Analisis hubungan menggunakan uji Chi-square atau Fisher dengan SPSS 17.0.

Hasil: Terdapat 10752 kasus rujukan obstetri di RSCM periode 2008-2010, tiga terbanyak preeklampsia berat, ketuban pecah dini dan persalinan preterm. Proporsi kasus rujukan HPP di RSCM adalah 2%, 44 kasus (20,5%) termasuk ke dalam morbiditas berdasarkan five scoring system sedangkan mortalitasnya terdapat pada 3 kasus (1,4%) dari seluruh kasus rujukan HPP. Rate kematian ibu terhadap morbiditas kasus rujukan HPP adalah 6.81% (3/44) dengan case/fatality ratio 14.7 : 1. Dari ketiga faktor, yang berhubungan dengan morbiditas akibat HPP adalah faktor usia dan perujuk (midwife). Tidak terdapat hubungan bermakna paritas, pendidikan, cara bayar, pekerjaan, jenis HPP dan etiologi HPP dengan morbiditas akibat HPP. Analisis mortalitas terhadap kasus rujukan dilakukan secara deskriptif pada 3 kasus.

Kesimpulan: Proporsi kasus rujukan HPP di RSCM periode 2008-2010 adalah 2%, sebanyak 20.5% mengalami morbiditas dan mortalitas pada 1.4% kasus. Variabel yang memiliki hubungan bermakna dengan morbiditas adalah usia dan faktor perujuk.

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Kata kunci: five scoring system, morbiditas ibu, mortalitas ibu, rujukan HPP

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INTRODUCTION

In developing countries like Indonesia, post partum hemorrhage has been a nightmare for obstetricians even in a woman without any previously detected risk factor.[1,2] Maternal mortality ratio in Indonesia was the highest among Southeast Asian Countries, which is 228/100.000 live birth, based on SDKI 2007.[3] PPH was the major cause (43%) of maternal mortality in Indonesia, starting in 1998 up until now.[2]

Traditionally PPH defined as bleeding > 500 ml after placenta expulsion for vaginal delivery and >1000 ml for C-section, its been hard to asses since the assesment was too subjective and underestimate. Nowadays definition has been changed to any bleeding that significantly changed hemodynamic of the body.[4]

Many factors contributed to maternal morbidity and mortality in Indonesia, not just obstetrical aspect but also non obstetrical factors such as cul-

tural perception, financial problem and geographical factor.[5] Referral factors also play an important role for morbidity and mortality of PPH cases. In Indonesia, a referral system was already established for obstetrical cases, started at *pondok bersalin desa* (POLINDES) implemented by a midwife, primary health care with basic obstetrics and neonatal services or *pelayanan obstetri neonatal emergensi dasar* (PONED) with at least one doctor and midwife, hospital services with specialized obstetric and neonatal emergency services or *pelayanan obstetri neonatal emergensi khusus* (PONEK) implemented by an obgyn and midwife, and finally, the last resort is tertiary hospital care like Rumah Sakit Dr. Cipto Mangunkusumo (RSCM).[6]

With these implemented system, morbidity and mortality due to PPH should be reduced, but as we mentioned before, there are lots of factors contributed to the cause, not only obstetric but also non obstetric factors.

Maternal mortality has been the target of studies and became a health indicator in many countries, but actually the number of morbidity is much higher. Study of the morbidity rate is also important and could be an alternative or complementary to the study of maternal death events as a health indicator. By identifying a large number of women with morbidity, study of morbidity will improve the opportunity to preventability of both maternal morbidity and mortality.[7,8]

Criteria for morbidity is still a controversy, but the five scoring system so far has the highest specificity (93.3%) and sensitivity 100%.[9] The scoring system would be described in Table 1.

Table 1. Weighting for the Five Scoring system

Criteria	Scoring
Organ system failure (≥1 organ)	5
ICU admission	4
Tranfussion > 3 unit	3
Extended intubation (≥12 hours)	2
Surgical intervention (hysterectomy)	1

*total scoring Five scoring system ≥ 3 classified as severe morbidity and ≥ 8 as near miss morbidity.

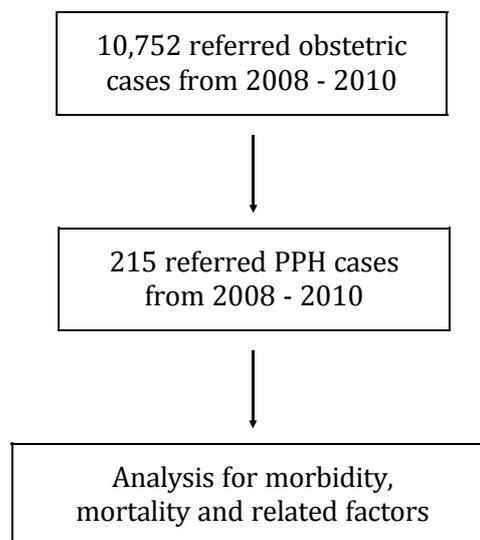For the analysis, severe and near miss cases of morbidity were classified as morbidity.

The data of referred cases of PPH in a tertiary hospital care like RSCM was still not available, thus this research will help us to get an overview of obstetrics referral system in Jakarta and surrounding areas, identifying morbidity and mortality due to PPH and its related factors. Hopefully, in the end, it would improve our services for maternal health in Indonesia.

METHOD

This study was conducted in Obstetrics-Gynecology Department, Faculty of Medicine, University of Indonesia, through January 2011 - October 2011. The data was secondary data from medical record dated back from 2008 until 2010.

This study was a cross sectional study. All data of referred obstetric cases were taken from electronic data that have been collected before by medical records team of RSCM. Samples for all referred cases of PPH was calculated, and it is estimated that the minimum requirement was 192 samples. But we finally decide to take all referred PPH cases in 2008-2010 consecutively.

10,752 referred obstetric cases from 2008 - 2010

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215 referred PPH cases from 2008 - 2010

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Analysis for morbidity, mortality and related factors

Two hundred fifteen referred PPH cases were evaluated for univariate and bivariate analysis. All result data were filled both in distribution table and cross table that appropriate with the goal of this study, then analized using SPSS 17.0 with Chi square or Fisher test for bivariate analysis. The results will be in p value, odd ratio and 95% confidence interval.

All 215 cases were analyzed using Five scoring system classification, and concluded as morbidity, mortality or non morbidity and mortality.

RESULTS

A total of 10.752 referred obstetric cases were recorded during the period 2008-2010. Severe preeclampsia, premature rupture of membrane and preterm labour were the three most common referred obstetric cases in RSCM, while post partum hemorrhage was only 215 cases from all, or 2% of all referred cases.

Age of subject ranged from 16-44 years with a mean age 29.42 ± 5.99 years. One hundred nine (50.7%) cases were in the < 30 years age group and 106 (47.3%) cases in the $\geq$ 30 years age group. Median parity was 2 ± 1.23. One hundreds sixteen subjects (54%) had basic educational background (elementry until junior high school). Most subjects were not working (most were housewives) and the commonly used methods of payment were Gakin/Jamkesmas (free of charged, managed by Government) in 10 cases (4.7%), SKTM (half of charged managed by Government, the rest should pay by patient) in 112 cases (52.1%) and 93 cases (43.3%) were paid by the patient themselves.

The mean hemoglobin level was 8.32 ± 2.42 g/dl, with the lowest level was 2.4 g/dl. Characteristics

of PPH, 179 cases were having primary PPH (83.3%) which was happened during 24 hours delivery time, and 36 cases were secondary PPH (16.7%). The most etiology of PPH was tone factor in 134 cases (62.3%), tear in 42 cases (19.5%) and tissue in 39 (18.1%) cases. PPH therapy in this research consists of only uterotonics in 55 cases (25.6%), hemostasis and perineoraphy 45 cases (20.9%), placenta manual in 41 cases (19.1%), curretage 34 cases (15.8%), controlled cord traction in 18 cases, reposition of uterus in 3 cases, condom insertion in 2 cases and hysterectomy in 17 cases (7.9%). From referral factors, most of cases were referred by midwife in 174 cases (80.9%), obgyn 22 cases (10.2%) and general practioner in 19 cases (8.8%). Primary health care was the most referral place in 109 cases (50.7%).

Table 2. Maternal outcome of referred PPH cases during 2008-2010 in Dr. Cipto Mangunkusumo Hospital

Outcome	n	Percentage
Morbidity	44	20.5
Mortality	3	1.4
Non morbidity-mortality	168	78.1
Total	215	100

Table 3. Relation between variables and morbidity event.

Variables	Morbidity		p	OR (95% CI)
	yes (n,%)	no (n,%)		
Age				
≥30 yrs	28 (26.4%)	78 (73.6%)	0.033	2.08 (1.05-4.13)
<30 yrs	16 (14.7%)	93 (85.3%)		
Parity				
≥3	25 (26.6%)	69 (73.4%)	0.06	0.51 (0.26-1.00)
<3	19 (15.7%)	102 (84.3%)		
Method of payment				
Gakin-Jamkesmas	3 (30%)	7 (70%)	0.185*	2.64 (0.60-11.52)
SKTM	28 (25%)	84 (75%)	0.06	2.05 (0.99-4.24)
Umum	13 (14%)	80 (86%)	Ref	
Type of PPH				
Primary	37 (20.7%)	142 (79.3%)	0.868	1.08 (0.44-2.66)
Secondary	7 (19.4%)	29 (80.6%)		
Etiology				
Tone	26 (19.4%)	108 (80.6%)	0.878	0.93 (0.38-2.26)
Tears	10 (23.8%)	32 (76.2%)	0.721	1.21 (0.42-3.47)
Tissue	8 (20.5%)	31 (79.5%)	Ref	
Referrer				
Midwives	22 (12.6%)	152 (87.4%)	0.001*	0.83 (0.03-0.22)
General physician	8 (42.1%)	11 (57.9%)	0.168	0.42 (0.12-1.46)
Obgyn	14 (63.6%)	8 (36.4%)	Ref	
Total	44	171		

*Fisher

Maternal outcome of 215 cases referred PPH were described in Table 2 after we identified each factor from Five scoring system of each case.

Mortality for referred PPH cases were happened in 3 cases during 2008-2010, accounting for 1.5% from all referred PPH cases. This number was much higher than mortality due to preeclampsia and/or worsening of preeclampsia which is 0.33%. The rate of maternal death in PPH cases with morbidity was 6.81% (3/44), meaning that the case/fatality ratio was 14.7 : 1. Relation between factors and morbidity event would be described in Table 3.

The first case of maternal mortality of PPH in RSCM was referred by midwife with hypovolemic shock and uterine atonia. In this case we performed hysterectomy, but the patient was unstable and suffered DIC. After 10 days of ICU admission, the patients died due to multiple organ failure.

The second case was a 28 years old women with the history of 2 parity. The patients was having vaginal delivery at midwife. Patient was referred to the nearest hospital, and was having a resuscitation performed without definitive treatment and the patient referred again to RSCM. When the patient arrived, she was already in irreversible shock and cardiac arrest.

The third case was a 33 year oldwoman with history of 3 parity, who was referred by midwife with hypovolemic shock and uterine atonia. Patient was underwent hysterectomy. During the 8th day in ICU, the patient died due to septicemia.

DISCUSSION

Proportion of referred obstetric PPH cases in RSCM in 2008-2010 was 2%, almost the same with east Nigeria (2.72%) and Pakistan (2.4%).[10,11]

The age profile in our study was lower than in Japan, which subjects were mostly at the third decade of life.[12] This reason for this difference maybe due to the younger age of marriage in Indonesia and the relatively increasing pregnancy rate at younger ages. Statistically significant between age and morbidity, with p value 0.033 and OR 2.08 (CI 95% 1.05-4.13)

Numbers of parity is another risk factor in many studies. Multiparity particulary grand multiparity has been specified as a predisposing factor for PPH.[13,14] In this study, parity was not significantly related with the event of morbidity (p 0.06).

In this study, most of cases were using SKTM, but analysis showed that there was no relation between method of payment and morbidity with p value >0.05. Health insurance in Indonesia was not working optimally, and as a result, this economy problem will make a burden for patient to get an obstetric services in adequate time.

WHO stated that 50% of PPH usually happens in the first 24 hours after delivery and it could end with as a mortality event.[2] This research also showed the same result that most cases (>50%) happened in less than 24 hours after delivery (primary PPH). Analysis between the type of PPH and morbidity was not statistically significant (p 0.868). Uterine tone would be 70-90% as an etiological factor for PPH[12,15] this

Table 4.   Profile of 3 mortality cases in Dr. Cipto Mangun-kusumo Hospital

Varibles	Case 1	Case 2	Case 3
Age	35 yrs	28 yrs	33 yrs
Parity	4	2	3
Education	Elementry School	High School	High School
Method of payment	SKTM	SKTM	SKTM
Occupation	Housewife	Housewife	Housewife
Type of PPH	Primary	Primary	Primary
Etiology	Atonia	Atonia uteri (inversio)	Atonia
Therapy	Hysterectomy	Reposition	Hysterectomy
Level of Hb	3 g/dl	NA	5.9 g/dl
Referrer	Midwife	General physician	Midwife

statement was similar with our result, in which atonia was found in 62.3% cases. Tears and tissue was found in 19.5% and 18.1%, as the second and third most common etiology of referred PPH cases in RSCM. Cameron et al stated tears and tissue as the etiology of PPH happened in 20 and 10% cases.[12] From 215 cases, thrombin as an etiology was not found, and from literature also thrombin factor was only found < 1%.[12] There's no relation between the etiology and morbidity (p value >0.05). From referrer variable, most of cases were referred by midwife, and it was statistically significant that midwife related to a lower morbidity (p 0.001f with 0.83 (0.03-0.22)), compared to obgyn as a referrer. This result showed that midwife as a protective factor compared to obgyn, but it might be due to the reason that PPH cases referred by midwife were in low-moderate emergency condition.

Five scoring system used for maternal morbidity assesment in this research criteria, resulting 44 cases of morbidity (20.5%), while mortality in 3 cases (1.4%) due to referred PPH cases in RSCM. Even PPH was not the three most of referred obstetric cases in RSCM, mortality in referred PPH cases was higher (1.5%) than mortality in referred severe preeclampsia cases at RSCM (0.33%). The rate of maternal death in PPH morbidity was 6.81% (3/44), what means that the case/fatality ratio was 14.7:1.

CONCLUSION

The rate of referred PPH cases in RSCM in the period of 2008-2010 was 2%. The incidence of maternal morbidity of referred PPH cases based on Five scoring system was 20.5%, while the incidence of mortality was 1.4%. Mortality to morbidity rate for referred PPH cases in RSCM was 6.81% (3/44) with case/fatality ratio 14.7:1. Age seems to be the only factor related to the event of morbidity.

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