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Research Article

**A RESEARCH STUDY TO ASSESS THE SUCCESS RATE
BETWEEN INTRAUTERINE BALLOON TAMPONADE AND B-
LYNCH SUTURE TO TREAT PPH PATIENTS**¹Dr. Muhammad Yasir Aslam, ²Dr. Nazia Bibi, ³Dr Faria Ambreen¹Medical Officer, Sheikh Zayed Medical College RYK²WMO, Sheikh Zayed Medical College Rahim Yar Khan³WMO in Cardiology Unit Cardiac Center QAMC Bahawalpur**Abstract:**

Objective: The determination of success rate between B Lynch suture and intrauterine balloon tamponade in the treatment of severe PPH (post-partum haemorrhage) is the objective of the research.

Material and Method: The model of the research was RCT which was performed at Services Hospital, Lahore from August 2018 to February 2019. The number of intense post-delivery haemorrhage patients enrolled for research was one-hundred and four. The age of the enrolled patients was between twenty to thirty-five years with thirty-six to forty-two weeks of pregnancy age. Those females who are suffering from genital tract trauma, ruptured uterus, retained products of conception as well as bleeding irregularity was not included in the research. The entire enrolled patients for research were irregularly divided into two categories, which are intrauterine balloon tamponade (category A) and B lynch suture (category B) by utilizing the lottery technique. A resultant variable such as restraining of bleeding in fifteen minutes after the operation was recorded.

Results: The average age of females in category "A" was (27.69 ± 3.68) years and in category "B", it was (27.60 ± 3.65) years. The average pregnancy age in category "A" as well as in category "B" was (39.98 ± 1.57) weeks and (40.04 ± 1.68) weeks respectively. Whereas success rate in category "A" was 67.31% and in category "B" was 88.46% with (P value= 0.009).

Conclusion: The research determines that success rate in term of bleeding controlled in fifteen minutes of category "B" (b lynch suture) is much better with respect to category "A" (intrauterine balloon tamponade) in the treatment of severe post-delivery haemorrhage and should be utilized as first-line procedure in managing severe postpartum haemorrhage.

Keywords: Postpartum haemorrhage (PPH), caesarean, hysterectomy.

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INTRODUCTION:

The loss of blood up to 500ml in the shape of bleeding after vaginal delivery as well as blood loss up to 1000ml in the caesarean case is called PPH [1]. The primary factor of mother death, as well as malaise throughout the world, is PPH, which is increasing in developed states with the passage of time [2]. Higher to thirty percent of maternal casualties are mainly due to PPH in developing states [3]. Additionally, casualties with postpartum haemorrhage could be minimized via appropriate care, identification as well as management [4].

The major reason for postpartum haemorrhage is uterine atony along with uterine rupture, genital tract damages, placental tissues; maternal coagulation irregularity might be the causes of postpartum haemorrhage. However, the multiple of the females who are suffering from postpartum haemorrhage entanglements have nil detectable clinical hazardous elements, no pregnancy, as well as huge multiparty, are connected with huge bleeding chances after delivery. Postpartum haemorrhage might be provided by anaemia which is preexisted, and in such occurrence blood loss of minor volume might be resultant in negative clinical sequelae [5]. First-line management choice for postpartum haemorrhage comprises of conventional treatment with uterotonic medicines. Uterine packing includes in 2nd line treatment, outer compression with uterine stretching as well as choosy devascularization via ligament or embolization of uterine artery [6, 7]. Conventional treatment failure generally deemed to guaranteed hysterectomy as well as today the most general method to control postpartum haemorrhage is hysterectomy [8]. After delivery hysterectomy is connected with small as well as prolong terms entanglements just like the loss of blood, other organs damages, healing of impaired injuries, and infection along with fertility loss [9]. With the objective of avoiding from hysterectomy as well as its problems, another method just like B lynch suture & intrauterine balloon tamponade was utilized most commonly [3, 7]. The objective of the designing intrauterine balloon catheters was to pause bleeding from other location rather than the uterus. Although series and reports of cases have been publicized where that type of catheters have been utilized effectively in postpartum haemorrhage treatment [3, 7]. A research conducted by Diemert A *et al* have presented its success up to sixty percent as PPH is a lethal entanglement of delivery and is linked with a huge ratio of mother casualties as well as malaise. The determination of success rate between B Lynch suture and intrauterine balloon tamponade in

treatment of severe PPH (post-partum haemorrhage) is the objective of the research. So on the foundation of the findings of the research, these specific cases could be given a procedure which is linked with greater success ratio, with the objective of minimizing mothers deaths as well as malaise because of severe PPH. Additionally, these specific patients were not given hysterectomy, as well as few practical approvals, could be formulated in our daily practice instruction for treating severe PPH via fertility perpetuating procedure.

METHOD AND MATERIAL:

The mode of the research was RCT which was performed at Services Hospital, Lahore from August 2018 to February 2019. The number of intense post-delivery haemorrhage patients enrolled for research was one-hundred and four. The age of the enrolled patients was between twenty to thirty-five years with thirty-six to forty-two weeks of pregnancy age. Those females who are suffering from genital tract trauma, ruptured uterus, retained products of conception as well as bleeding irregularity was not included in the research. Written approval was taken from the organizational review board as well as from the participants of the research. The loss of blood in shape of fast bleeding after vaginal delivery greater than 1000ml of blood loss greater than 1500ml after caesarean operation precedent than it is called severe PPH, and was measured via accumulation of prompt blood loss in 500ml capacity of kidney tray and after that utilization of 3×11×1 inch sizes of pads. The capacity of the entirely saturated pads 80mm whereas fifty percent of the saturated pad occupied 50ml of blood. Peripartum fall in HB of 4g/dl or additional from the threshold and needed an acute transfusion of minimum three or more than three blood bags was assumed as severe postpartum haemorrhage.

Entire patients of the research were irregularly divided into two categories that are category "A" and "B". basic examination such as CBC (Complete blood count), a complete assessment of urine, irregular blood sugar check, RFT (renal functioning test) and electrocardiograph (ECG where required) were conducted in each patient while hospitalization. Intrauterine balloon tamponade was given by intruding 4 Foleys catheter having a size of no 24 via the cervix into the cavity of uterine with cavity with 80 to 100ml of average balloon capacity hot salted was deep down into balloon producing a compute volume of (320ml to 400ml) of liquid. B lynch suture was utilized in "B" category patients in lithotomy situation for an approach to vagina with Pfannenstiel slash, the abdomen was opened. If the patients had

undergone through cesarean operation after which she bleeds, the specific cut was again opened. Initially, two-handed pressure was applied as well as in uniform time and attendant swabbed out the vagina with the objective of verifying appropriate bleeding control. With the help of assistant via bimanual compression the double length of the suture were pulled strongly reduce wound as well as to assist compression. The suture was an addition or little vertical as well as lying approximately 4cm away from cornua.

However, if the bleeding was controlled within fifteen minutes after surgery then the method was assumed as successful. Moreover, if the bleeding was not stopped within fifteen minutes after surgery then the method was assumed as unsuccessful. A Performa consisting of two parts was formulated for the said object and the data was noted on it. The detailed bio-data of the patients were entered on 1st part of Performa whereas 2nd part comprising on research variables. The entire facts were recorded as well as assessed by utilizing SPSS software. Average, as well as SD, was measured for quantitative variants such as age. Frequency and percentage were computed for qualitative variables such as parity as well as intrauterine balloon tamponade success. Chi-square test was utilized for success rate comparison between two categories with $P\text{-value} \leq 0.05$ was assumed as important. Consequences changes such as pregnancy age, parity as well as age were managed via stratification as well as post-stratification; chi-square was utilized to notice consequences on findings $P\text{-value} \leq 0.05$ was assumed as important.

RESULTS:

The average age of females in category "A" was (27.69 ± 3.68) years and in category "B", it was (27.60 ± 3.65) years. The average pregnancy age in category "A" as well as in category "B" was (39.98 ± 1.57) weeks and (40.04 ± 1.68) weeks respectively. Whereas success rate in category "A" was 67.31% and in category "B" was 88.46% with ($P\text{ value} = 0.009$). The number of patients whose bleeding was stopped within fifteen minutes was thirty-five (67.31%) in intrauterine balloon tamponade category (group A) along with with forty-six (88.46%) patients of B lynch suture category (group B). The expressively huge success rate was noticed in the category "B" with respect to category "A" along with $P\text{ value} = 0.009$. Entire enrolled patients were subdivided into three age categories i.e. twenty to twenty-five years age category, twenty-six to thirty

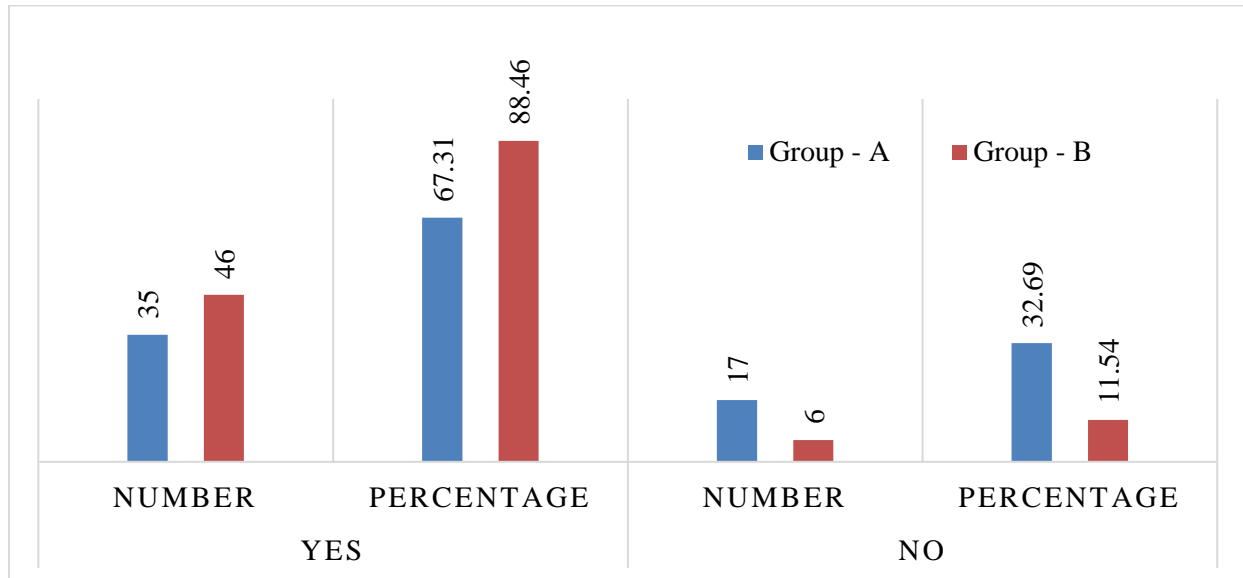
years age category as well as thirty-one to thirty-five years age category. Total thirteen (25%) patients of intrauterine balloon tamponade category and thirteen (25%) patients of B lynch suture category was associated with twenty to twenty-five years. The treatment success rate was recorded in ten (76.92%) patients of category "A" and twelve (92.31%) patients of category "B". Statistically unimportant variation of success rate was recorded between both the categories with $P\text{-value} = 0.277$. Among twenty-eight (53.85%) patients of category "A" as well as twenty-seven (51.92%) patients of category "B", the treatment success rate was recorded as nineteen (67.86%) in category "A" and twenty-three (85.19%) patients of category "B". However, success rate variation between both the categories was statistically unimportant with 0.130 of $P\text{-value}$. In thirty-one to thirty-five-year age category, out of eleven (21.15%) patients of category "A" and twelve (23.08%) patients of category "B", the treatment success rate was recorded in six (54.55%) patients and eleven (97.67%) patients. However, success rate variation between both the categories was statistically important with 0.043 of $P\text{-value}$.

Patients were further divided into three categories with respect to gestational age i.e. thirty-six to thirty-eight weeks gestation, greater than thirty-eight to forty weeks gestation and greater than forty to forty-two weeks gestation. Nine (17.31%) patients of research category "A" and ten (19.32%) patients of research category "B" were identified with thirty-six to thirty-eight weeks pregnancy, whereas treatment success ratio was eight (88.89%) and ten (100%) in category "A" & "B" respectively. However, the variation of success rate between both the categories was unimportant with 0.279 of $P\text{-value}$.

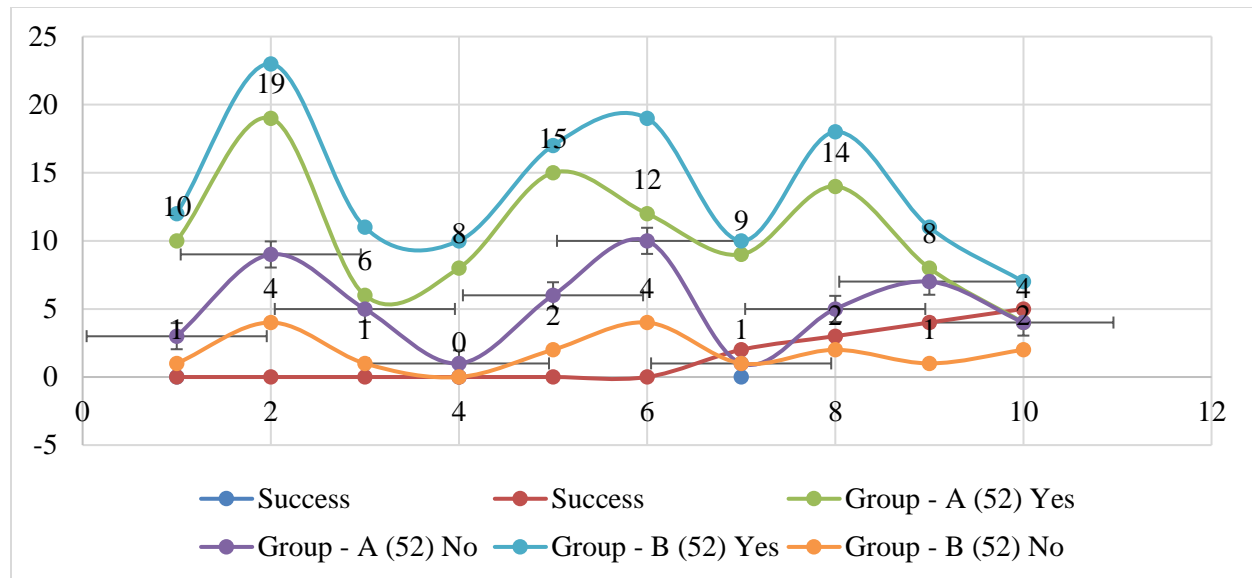
Total twenty-one (40.38%) patients of research category "A" and nineteen (36.54%) of research category "B" were identified with greater than thirty-eight to forty weeks gestation and treatment success ratio was recorded in fifteen (71.43%) and seventeen (89.74%) patients of category "A" and "B" respectively. Treatment success rate variation in both the categories was statistically unexpressive with 0.154 $P\text{-value}$. The treatment success rate was twelve (54.55%) and nineteen (82.61%) patients of category "A" & "B" who is associated with greater than forty to forty-two weeks gravidity category. the variation of the success rate of treatment between the two categories was statistically important with 0.042 of $P\text{-value}$.

Table – I: Group-wise success stratification

Success	Yes		No		P-Value
	Number	Percentage	Number	Percentage	
Group - A	35	67.31	17	32.69	0.009
Group - B	46	88.46	6	11.54	

**Table – II:** Success stratification among age group, gestational week and parity

Success		Group - A (52)				Group - B (52)				P-Value
		Yes		No		Yes		No		
		No	%	No	%	No	%	No	%	
Age Group	20 - 25	10	76.9	3	23.1	12	92.3	1	7.69	0.277
	26 - 30	19	67.9	9	32.1	23	85.2	4	14.8	0.13
	31 - 35	6	54.6	5	45.5	11	91.7	1	8.33	0.043
Gestational Week	36 - 38	8	88.9	1	11.1	10	100	0	0	0.279
	> 38 - 40	15	71.4	6	28.6	17	89.5	2	10.5	0.154
	> 40 - 42	12	54.6	10	45.5	19	82.6	4	17.4	0.042
Parity	2	9	90	1	10	10	90.9	1	9.09	0.943
	3	14	73.7	5	26.3	18	90	2	10	0.184
	4	8	53.3	7	46.7	11	91.7	1	8.33	0.03
	5	4	50	4	50	7	77.8	2	22.2	0.232



DISCUSSION:

In time diagnosis as well as treatment is the principal of postpartum haemorrhage management. Huge after delivery bleeding is an emergency like comminatory condition as well as an obstetrician fantasy [11]. The prime treatment of these specific patients needed numerous disciplinary inputs from an obstetrician, haematologist as well as anaesthetists. The conservation of uterine particularly in low parity case is the main objective of advance obstetrics [12]. Currently, numerous methodologies have been tested to elude hysterectomy, whenever uterotonic medicines missed managing PPH. The specific technique includes Hayman suture surgical compression just like B lynch brace sutures as well as balloon tamponade with intrauterine catheter with better findings [13, 14]. The RCT carried out a comparison of success rate (in reference to bleeding control) between B lynch suture and intrauterine balloon tamponade in severe PPH treatment. The average age of females in our research was (27.64 ± 3.65) years. The average age of females in category "A" (intrauterine tamponade category) was (27.69 ± 3.68) years and in category "B" (B lynch suture), it was (27.60 ± 3.65) years. Maximum numbers of patients fifty-five (56.3%) were between twenty-six to thirty years of age. These findings are too much correlative with the research conducted by Yaqub V et al how presented average age of twenty-seven years. With a maximum number of patients between twenty-six to thirty years of age [15]. A research conducted by Khamaiseh K et al identified average age of twenty-eight years in postpartum haemorrhage [16]. One more research performed by Ferrazzani S et al and Nizam et al presented much greater average age of thirty-six as well as thirty-five years

respectively with a maximum number of patients were greater than thirty-one years of age [17]. These outcomes are against our research. The average pregnancy age in our research was (40.01 ± 1.62) weeks with multiple of the patients forty-five (43.27%) were greater than forty to forty-two weeks of gravidity. This indicated that PPH hazards are higher in patients with greater gravidity age. These findings were also similar to the outcomes of Yaqub U et al and Tirumuru S et al [18].

In our research, the cases in which bleeding is stopped within the limit of fifteen minutes was thirty-five (67.31%) in intrauterine tamponade category, whereas in forty-six (88.46%) cases in B lynch suture category. However, the treatment success ratio was 67.31% and 88.46% in intrauterine balloon tamponade and B lynch suture category respectively with P-value = 0.009 which is important statistically. A research performed by Baskett TF et al on twenty-eight patients of postpartum haemorrhage and identified success rate of eighty-two percent in preventing hysterectomy as well as managing bleeding, uniformly in one additional research conducted by Wohlmuth CT et al other cases series and presented seventy-seven percent of success rate [20].

The success rate of sixty percent was reported in a research conducted by Diemert et al. in those patients who are treated with a just balloon as well as ninety percent of success rate with B lynch category. the treatment success percentage in one additional research via B lynch suture which avoids from hysterectomy was sixty-six percent as well as in conjunction with another surgical methodology was

seventy-four percent by Victoria et al [21]. This treatment success percentage was too minor with respect to our research however much greater success rate with comparison suture, generally in the range of ninety percent to hundred percent have been presented in multiple of the research [22, 23].

According to the research conducted by Palacios-Jaraquemada JM et al, treatment success rate with B lynch suture was ninety-four percent whereas Neelam N et al presented success ratio via B lynch suture in PPH as eighty-three percent [24, 25]. The success ratio via B lynch suture in managing postpartum haemorrhage was identified as very high i.e. ninety-seven to ninety-eight percent in a case series performed in Pakistan [26].

CONCLUSION:

The research determines that success rate in term of bleeding controlled in fifteen minutes of category “B” (b lynch suture) is much better with respect to category “A” (intrauterine balloon tamponade) in the treatment of severe post-delivery haemorrhage and should be utilized as first-line procedure in managing severe postpartum haemorrhage. In addition, a hysterectomy might be prevented in these specific cases and thus methodology should be utilized daily in our routine practice for treating severe PPH by fertility conservation technique.

REFERENCES:

1. Wohlmuth CT, Gumbs J, Quebral-Ivie J. B-Lynch suture: a case series. *Int J Fertil Women's Med.* 2005; 50:167-73.
2. Victoria YKC, William WKT. Uterine compression sutures for management of severe postpartum haemorrhage: five-year Severe postpartum haemorrhage management: comparison between intrauterine balloon tamponade and b lynch suture Ayesha Maryam Jamil, et al. 796 audits. *Hong Kong Med J.* 2014; 20:113–20.
3. Cho JH, Jun HS, Lee CN. The hemostatic suturing technique for uterine bleeding during cesarean delivery. *Obstet Gynecol.* 2000; 96:129-31.
4. Quahba J, Piketty M, Huel C. Uterine compression sutures for postpartum bleeding with uterine atony. *BJOG.* 2007; 114:619-22.
5. Palacios-Jaraquemada JM. Efficacy of surgical techniques to control obstetric haemorrhage: analysis of 539 cases. *Acta Obstet Gynecol Scand* 2011; 90:1036- 42.
6. Neelam N, Kumar SJ. B-Lynch suture – an Experience. *J Obstet Gynecol India.* 2010;60(2):128-34.
7. Faruqi NJ, Javed L, Yousaf F et al. B Lynch suture for the management of postpartum haemorrhage – a local experience. *Ann King Edward Med Coll.* 2004; 10:370-3.
8. Nizam K, Haider G. Role of Uterovaginal Packing in Postpartum Hemorrhage. *J Liaquat Uni Med Health Sci.* 2010;9(1):27-9.
9. Kong MCW, To WWK. Balloon tamponade for postpartum haemorrhage: case series and literature review. *Hong Kong Med J.* 2013; doi: 10.12809/hkmj133873.
10. Zwart JJ, Dijk PD, Van Roosmalen J. Peripartum hysterectomy and arterial embolization for major obstetric haemorrhage: a 2-year nationwide cohort study in the Netherlands. *Am J Obstet Gynecol.* 2010; 202:150. e1-7.
11. Diemert A, Ortmeyer G, Hollwitz B, Lotz M, Somerville T, Glosemeyer P, et al. The combination of intrauterine balloon tamponade and the B-Lynch procedure for the treatment of severe postpartum haemorrhage. *Am J Obstet Gynecol.* 2012; 206:65. e1-4.
12. Hackethal A, Brueggemann D, Oehmke F, Tinneberg HR, Zygmunt MT, Muenstedt K. Uterine compression U-sutures in primary postpartum haemorrhage after Cesarean section: fertility preservation with a simple and effective technique. *Hum Reprod.* 2008; 23:74-9.
13. Bonner J. Massive obstetric haemorrhage. *Baillieres Best Pract Res Clinical Obstet and Gynecol.* 2000; 14:1-18.
14. ACOG Practice Bulletin. Clinical Management Guidelines for Obstetricians and Gynaecologist. Oct 2006; 76:1039.
15. Haq G, Tayyab S. Control of postpartum and postabortal haemorrhage with uterine packing. *J Pak Med Assoc.* 2005 Sep;55(9):369-71.
16. Bagga R, Jain V, Kalra J, Chopra S. Uterovaginal packing with rolled gauze in PPH. *Med Gen.* 2004;6(1):50.
17. Yaqub U, Hanif A. Balloon Tamponade with Foleys Catheter: An Effective Method of Controlling Post-Partum Haemorrhage (PPH). *ANNALS.* 2010;16(4):295-8.
18. Khamaiseh K, Al-Ma’ani W, Tahat Y. Intrauterine Balloon Tamponade in the Management of Postpartum Hemorrhage: experience at the Royal Medical Services in Jordan. *J Royal Med Ser.* 2012;19(2):16-20.
19. Ferrazzani S, Perrelli A, Piscitelli C, De Carolis S. Balloon Internal Uterine Tamponade: Experience with 39 Patients from a Single Institution. *Clinical Obstet and Gynecol.* 2000; 14:12-8.
20. Tirumuru S, Saba S, Morsi H, Muamma B. Intrauterine balloon tamponade in the

- management of severe postpartum haemorrhage: A case series from a busy UK district general hospital *Open J Obstet Gynecol.* 2013;3:131-6.
21. Baskett TF. Uterine compression sutures for postpartum haemorrhage. *Obstet Gynecol.* 2007; 110:68-71.
 22. Chandraharan E, Arulkumaran S. Surgical aspects of postpartum haemorrhage. *Best Pract Res ClinObstetGynaecol.*2008;22:1089-102.
 23. Knight M, Callaghan WM, Berg C, Alexander S, Bouvier- Colle M-H, Ford JB, et al. Trends in postpartum haemorrhage in high resource countries: a review and recommendations from the International Postpartum Hemorrhage Collaborative Group. *BMC Pregnancy Childbirth.* 2009; 9:55.
 24. Tindell K, Garfinkel R, Abu-Haydar E, Ahn R, Burke T, Conn K, et al. Uterine balloon tamponade for the treatment of postpartum haemorrhage in resource-poor settings: a systematic review. *Br J Obstet Gynecol.* 2012;120(1):5-14.
 25. Karoshi M, Keith L. Challenges in managing postpartum haemorrhage in resource-poor countries. *Clin Obstet Gynecol.* 2009; 52:285–98.
 26. World Health Organization. *Managing complication in pregnancy and childbirth: a guide for midwives and doctors.* Geneva: WHO; 2000.