

Postpartum Haemorrhage: A Continuing Tragedy in Malaysia

K Siva Achanna, FRCOG

Professor of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences-Tingkat 13, Menara B, Persiaran MPAJ, Jalan Pandan Utama, Pandan Indah, 55100 Kuala Lumpur, Malaysia

Globally, over a half million women die annually from causes related to pregnancy and childbirth¹. In the developing world, postpartum haemorrhage (PPH) accounts for up to half of all maternal deaths². The wife of the Moghul Emperor Shah Jahan of India, Empress Mumtaz, had 14 children and died after her last childbirth of PPH in 1630. So great was the Emperor's love for his wife that he built the world's most beautiful tomb in her memory-the Taj Mahal³.

Malaysia has experienced dramatic improvements in the provision of Maternal and Child Health (MCH) services throughout the post-independence era. The Division of Family Health Development of the Ministry of Health, Malaysia through various technical committees introduced Programmes and Management Protocols to reduce maternal morbidity and mortality. A rigorous confidential system of enquiry into maternal deaths (CEMD) based on that of the triennial reports of England and Wales was introduced in Malaysia since 1991, audited by individual case note review at hospital, state and national levels. The objective was to identify shortfalls in care, recommend remedial measures and thus improve standards of care. Thus far, seven reports have been published (1991, 1992, 1993, 1994, 1995-96, 1997-2000, and 2001-05).

The average blood loss during a normal vaginal birth has been estimated at 500 ml and caesarian delivery at 1,000 ml. A widely used definition for PPH currently is that proposed by the World Health Organisation (WHO)⁴ as any blood loss from the genital tract during delivery above 500 ml. The first CEMD alluded to the incidence of PPH maternal death to be 27.2 % of the total 224 maternal deaths then⁵. It is gratifying to note that this figure has declined to 13.6 % of 125 maternal deaths in the 2001-05 report⁶. Almost half of the deaths were due to atony of the uterus followed by retained products of conception. This decline is certainly not in *pari passu* with the PPH mortality in the United Kingdom (UK) where there were only five deaths⁷ compared to 17 deaths in Malaysia⁶. Hence it is important to focus on aggressive measures in the direction to further reduce PPH maternal deaths. It is of paramount importance that all efforts are focused in this direction by the involvement of the MOH, the Malaysian Medical Association, the Academy of Medicine Malaysia and the Obstetrics and Gynaecological Society of Malaysia. However, it has to be acknowledged that these agencies are already putting in great effort towards this goal. The

measures undertaken to address high rates of "substandard care" should focus on three critical areas: reduction in delays in seeking medical care, delay in reaching healthcare facilities and delay in appropriate care in a health institution. These are problems encountered mainly in developing and third world countries.

Risk factors associated with lifestyle changes

Lifestyle changes in recent years have resulted in lower maternal resilience towards safe reproductive ability. One of these changes include the prospect of more women seeking tertiary education leading to delayed child bearing and increased mean maternal age at child birth. In addition, with aging, maternal obesity (BMI > 30 kg/m²), and complex medical disorders are bound to occur. The increasing number of multiple pregnancies in the wake of novel reproductive techniques, with the consequence of increased surgical interventions, is also a contributory risk factor for PPH. Furthermore, caesarean section rates are rising due partially to patient request⁸, fear of medico-legal litigations⁹ and recent adverse reports on anorectal function¹⁰. This will lead to more placenta praevia and accreta in subsequent pregnancies. Morbidly adherent placentae are becoming increasingly frequent; the numbers requiring hysterectomy then rises too.

Strategies for the prevention of PPH

Historically, Crede's manoeuvre, was the first to introduce the method for management of third stage of labour. The introduction of ergometrine and blood transfusion facilities, emergency obstetric services or "flying squads" came in the thirties. Modern day policy of "Active management of labour" pioneered by O'Driscoll in 1969, is a means of reducing the number of prolonged labours to fewer than 12 hours and operative delivery rates to a minimum. The key to the management of PPH involves rapid recognition and diagnosis of the condition, restoration of circulatory blood volume to maintain tissue perfusion and oxygenation with a simultaneous search for the cause.

An assessment of vital signs (level of consciousness, pulse, blood pressure and oxygen saturation, if available) and amount of blood loss accurately must be made. Immediate resuscitation measures include inserting two large-bore (14G) intravenous cannulae. Rapid infusion of warmed crystalloids

Corresponding Author: Siva Achanna, Universiti Sains Islam Malaysia, Department of Obstetrics & Gynaecology, Faculty of Medicine & Health Sciences-Tingkat 13, Menara B, Persiaran MPAJ, Jalan Pandan Utama, Pandan Indah, 55100 Kuala Lumpur, Malaysia. Email: sivaachanna@gmail.com

(0.9% normal saline or Hartmann's solution) or colloids are undertaken until cross-matched blood is available. Fluid resuscitation in obstetric haemorrhage is often conservative either because of underestimation or as a result of rapid blood loss. Under-resuscitation may lead to hypovolaemia and the attendant risks or over-resuscitation leading to pulmonary oedema.

After detailed evaluation and when medical treatment fails, various surgical interventions may be attempted. Uterine packing fell into disfavour initially because of infection, however, a recent resurgence of interest has shown favourable outcomes. Bimanual and aortic compression during transfer of cases to tertiary centres has been discussed in the CEMDs. In catastrophic PPH, application of compression sutures (B-Lynch), systematic pelvic devascularisation by ligation of tubal branches of ovarian and internal iliac arteries have shown approximately 90% success rates. In situations where fertility is a premium, services of interventional radiologist are sought for uterine artery embolization. Attention to postoperative care in critical care areas, with multidisciplinary input is equally vital. While subtotal hysterectomy or total hysterectomy remains a last resort, it should be considered sooner than later. Availability of senior personnel and sustained clinical training and retraining junior specialists and post-graduates is pivotal.

Ensuring vigilant care of critical patients in high dependency and intensive care units with better monitoring systems and trained personnel in post-operative care has been consistently echoed in the peri-operative mortality audits of Malaysia¹¹. This issue has also been alluded to in the Peri-Operative Care Study-Protocol: November 2009 of the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) in the UK¹².

Updated management protocols and training in the management of massive obstetric haemorrhage must be taught to all levels of healthcare personnel periodically to account for rapid attrition and retirement of staff. Infrastructure strengthening has been an ongoing exercise in all the 5-Year Malaysia Plans. Unlike the situation before Independence in 1957, geographical remoteness, inaccessibility to healthcare facilities, rapid transportation of ill-patients to tertiary centres, availability of blood transfusion services have all been addressed. There are more hospitals and primary care health facilities built in all states. Antenatal risk approach¹³ study using the four colour codes denoting the severity of risk had been adopted with practical guidelines for the nursing personnel at primary care levels. The colour coding was introduced as a triaging strategy. The objective of this study was to assess the level of appropriate management and outcomes in obstetrics in selected districts with high and low maternal mortality. However, the colour assignment was found accurate only in 56.1% of cases in low maternal mortality areas and 55.8% in high maternal mortality areas.

The Obstetric Red Alert System⁵ was also established to facilitate a fast, efficient and coordinated team management of selected obstetric emergencies such as eclampsia, severe

haemorrhage, disseminated intravascular coagulation and obstetric shock. Personnel on call out of hours carry mobile phones to avoid delays in tracking them down through the hospital switchboard. Despite this recommendation, the system is not universally practiced in all hospitals due to implementation problems. Besides, obstetric drills are also used increasingly in many public units, to test, improve and maintain clinical awareness and highlight system failures. Conduct of regular drills enables to test effectiveness, unfortunately this is not carried out in all centres.

There is a clear need for fertility regulation in high risk groups. All the seven CEMD reports have been relentlessly echoing the high maternal mortality in high parity and older mothers. Family planning is one of the pillars of Safe Motherhood Initiative (SMI)¹⁴. The initiative is an international effort to raise awareness of the scope and dimensions of maternal mortality. The 5th Report on CEMD¹⁵ reiterates that generally less than a quarter (25%) practised contraception. Even the 6th and 7th CEMD Reports reiterates on the significance of this issue. It was found that the use of contraception amongst grand multiparae was relatively lower than in those who were Para 1-5 group. The reason for such low uptake was due to unawareness and lack of knowledge. This needs to be urgently addressed.

To address the needs of mothers living in remote, geographically inaccessible rural areas, who express fear of distance and unfamiliar atmosphere of hospital labour rooms with high technology equipment, they are encouraged to deliver in rural Alternative Birthing Centres (ABCs)¹⁶. All the seven CEMD Reports have clearly shown that the majority of these mothers of high parity, with lack of antenatal care, short birth intervals, and advanced maternal age have a high preponderance to PPH. ABCs are to be manned by qualified midwives with availability of facilities for transfer to base hospitals in emergencies. Many such centres are located in rural areas of Kelantan and in other states as well.

The Impact of CEMDs made in combating PPH

PPH throughout the last 20 years from the inception of the first CEMD report in 1991 till today, has remained one of the leading causes of maternal mortality in Malaysia although it declined from 27.5% of total maternal deaths in 1994¹⁵ to 16% of total maternal deaths over 5 years from 2001 to 2005⁶. Many guidelines, management protocols on PPH, recommendations on infrastructure strengthening, training, improvements in work processes have been recommended. However, the delay in release of the CEMD reports have minimized the impact they have in further reducing PPH and maternal mortality. The 5th CEMD Report (1995-1996)¹⁷ echoed that the Malaysian Confidential Enquiries Reports have been credited in changes in practice (67.7%), training (66.7%), development of protocols (61.1%), increased staffing (43.6%), development of facilities (39.8%) and allocation of increased budget in (29.5%). Although it appears positive steps are taken, the uptake of contraception, implementation of the red alert system, colour coding system, obstetric drills are still not fully implemented in many health care institutions.

Malaysia today is committed to achieving the Millennium Development Goals (MDG 5)¹⁸. The MDG-5 calls for a reduction of maternal mortality by 75% in 2015 from 1990 levels and this philosophy is yet to be seen. In 1987, health experts, development professionals and policy makers gathered in Nairobi to inaugurate the global SMI¹⁴. Malaysia too adopted this Initiative but has fallen short of the goal it set almost 20 years ago to reduce maternal deaths by 50 per cent by the year 2000. Despite the efforts put in by all senior obstetricians (resource persons), policy makers, stakeholders and other healthcare providers in the eighties and nineties in formulation of the CEMD recommendations, PPH continues to be a leading cause of maternal mortality in Malaysia. This is partly because of late recognition of the problem, delay to institute care, delay in implementing policies, inadequate optimization and inappropriate care rendered.

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