Nigeria Non-atonic Gynecologic and Obstetric Hemorrhage Treated with the Non-pneumatic Anti-Shock Garment (NASG)

FIGO 2009 XIX World Congress of Gynecology and Obstetrics

Hadiza Galadanci[1]; Adetokunbo Fabamwo[2]; Titiola Duro-Aina[3]; Aminu Isakyu[1]; Oladosu Ojengbede[3]; Lyndsay McDonough[4]; Adeoti Oshinowo[5]; Suellen Miller[6]

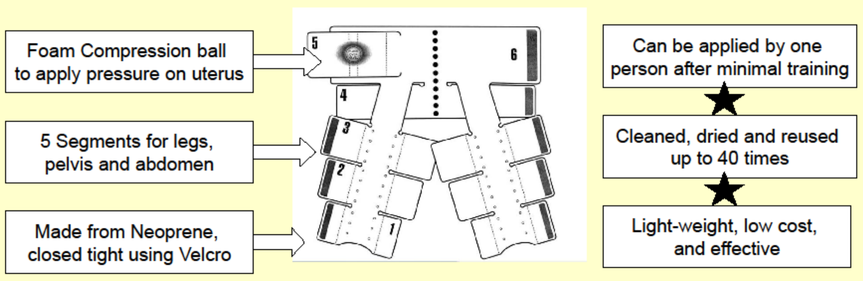
[1] Department of Obstetrics and Gynaecology, Aminu Kano Teaching Hospital, Kano, Nigeria; [2] Department of Obstetrics and Gynaecology, Lagos State University Teaching Hospital, Ikeja, Nigeria; [3] Centre for Population and Reproductive Health, University College Hospital, Ibadan, Nigeria; [4] School of Public Health and Tropical Medicine, Tulane University, New Orleans USA; [5] Stanford Medical School, Stanford USA; [6] Department of Obstetrics, Gynecology and Reproductive Sciences, University of California San Francisco, USA

1: BACKGROUND / OBJECTIVES

Obstetric hemorrhage (OH) is the leading cause of maternal mortality in resource limited settings. In rural areas of Nigeria, as many as 1800 women die of obstetric hemorrhage per 100,000 live births.[1]

New technologies and strategies, such as oral misoprostol, oxytocin in Uniject, and Active Management of Third Stage Labor are available to prevent and manage uterine atony.[2,3] However, not all cases of uterine atony will respond to uterotonic prevention and/or treatment and many etiologies of OH have a non-atonic etiology.

The Non-Pneumatic Anti-Shock Garment (NASG) is a low technology first-aid device used for the management of hypovolemic shock secondary to obstetric hemorrhage.[4,5]



Our objective was to determine if women suffering hypovolemic shock from non-atonic OH treated with the NASG plus standard protocol have better outcomes than women treated only with standard protocol.

2: METHODS

A pre-intervention / intervention study of NASG for OH was conducted in 4 tertiary hospitals in Nigeria in Oyo, Lagos, Kano and Katsina states.

This sub-study of non-atonic cases represented 42% of all cases in the larger study.

N=191 (70 pre- intervention, 121 post-intervention/NASG)

Non-atonic etiologies included ectopic pregnancy, ruptured uterus, lacerations, placenta previa, abruption.

Blood Collection Drape

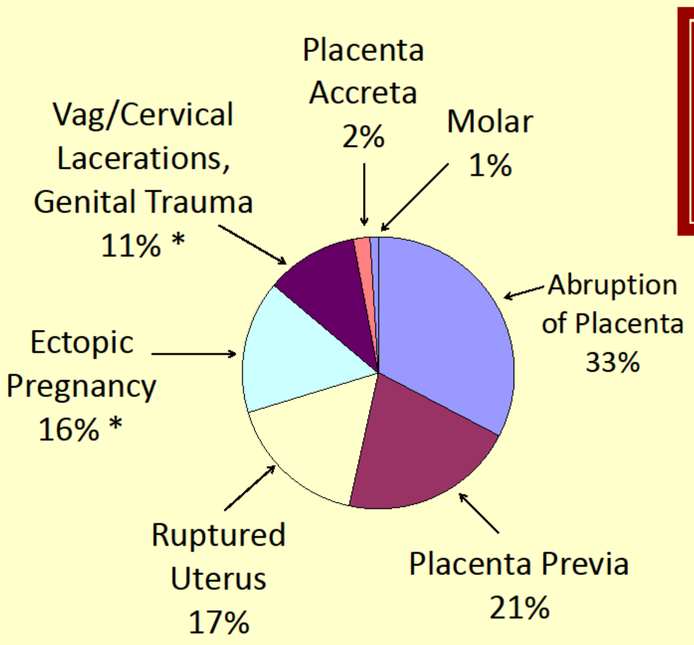
Entry criteria included obstetric hemorrhage (blood loss ≥ 750 ml) and at least one sign of shock (pulse >100; SBP<100)

Comparisons on demographics, treatment, and outcomes:

- Measured blood loss (in blood collection drape)
- Extreme Adverse Outcomes (EAO) (severe morbidity & mortality)

T-tests, chi square, and relative risks with 95% confidence intervals

3: ETIOLOGIES



* Significant differences between phases

Mean Percentage of Women with Primary Diagnosis of Non-Atonic Hemorrhage (N=191)

4: RESULTS

- **All women were in severe shock; 57% in the pre-intervention phase and 79% in the NASG phase had a MAP < 60/non-palpable BP (p=0.001).**
- **There were no differences in age, parity or duration of pregnancy, nor in treatment variables, except women in the NASG were more likely to get >1500 mL IV fluids in the 1st hour after study admission (p<0.001).**
- **Outcomes were better for the NASG group with fewer severe morbidities (renal failure, ARDS, cardiac failure, cerebral impairment) and reduced mortalities. EAOs reduced by 46.5%. There was also a significant reduction in blood loss for the NASG group.**

	PRE (N=70)	NASG (N=121)	Statistical test
Mean days in hospital after study admission, days, (SD) (N=157)	5.0 (SD=3.4)	4.2 (SD=3.3)	T-test, t=1.58 P=0.116
Mean measured blood loss, mL, (SD) (N=87)	741 (SD=606)	229 (SD=181)	T-test, t=5.89 P<0.0001
Extreme Adverse Outcome (mortality or severe morbidity) %, (n) (N=191)	20% (N=14)	11% (N=13)	RR=0.54 95% CI=0.27-1.08

5: CONCLUSIONS

Limitations included: small sample size, pre-intervention/ intervention design, challenges to resuscitate patients due to lack of blood, and missing data caused by overburdened facilities and clinicians

Women in shock secondary to OH from non-atonic etiologies may have improved outcomes by adding the NASG to standard shock / hemorrhage management

Larger studies with a more rigorous design are required to demonstrate this

6: REFERENCES

[1] Umeora, O. U; Esike, C. O; Egwuatu, V. E (2005) Maternal mortality in rural Nigeria, International Journal of Gynaecology & Obstetrics 88 (3)
[2] Cotter A, Ness A, Tolosa J. Prophylactic oxytocin for the third stage of labour. Cochrane Database of Systematic Reviews 2001; Issue 4
[3] PATH (2008) Introducing Oxytocin in the Uniject™ Device: An Overview for Decision-Makers, Seattle, USA. Available at: http://www.path.org/files/TS_oxy_uniject_overview.pdf
[4] Miller, S; Ojengbede, O; Turan, JM; et al (in press) A Comparative Study of the Non-Pneumatic Anti-Shock Garment (NASG) for the Treatment of Obstetric Hemorrhage in Nigeria, International Journal of Gynecology and Obstetrics & Gynecology
[5] Miller, S et al (2007) Use of the non-pneumatic anti-shock garment (NASG) to reduce blood loss and time to recovery from shock for women with obstetric haemorrhage in Egypt. Global Public Health 2 (2)

University of California San Francisco UCSF National Center of Excellence in Women's Health
advancing health worldwide
Bixby Center for Global Reproductive Health
Lagos State University Lagos, Nigeria
MacArthur The John D. and Catherine T. MacArthur Foundation
College of Medicine University of Ibadan

FIGO2009 669--P
ABT38 Womens Health Issues in Developing Countries
Adetokunbo Fabamwo
DOI: 10.3252/pso.eu.FIGO2009.2009
FIGO
PosterSessionOnline.com