Management of Obstetric Hemorrhage Not Caused by Uterine Atony: Policy Implications for Safe Motherhood Based on Pilot Studies of the NASG in Egypt and Nigeria

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Panel Discussion 3446 - Monday 5 November 2007, 8:30pm

Global Experiences with the Non-pneumatic Anti-Shock Garment: A New First Aid Device for Saving Mothers' Lives from Obstetric Hemorrhage

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Background

- Recent policy focuses on the use of uterotonics for prevention and treatment of PPH due to uterine atony
- However, obstetric hemorrhage includes conditions that **do not respond to uterotonics**
  - **Lacerations**
  - **Some complications of Abortion**
  - **Ectopic Pregnancy**
  - **Abruption**
  - **Ruptured Uterus**
  - **Placenta previa**
  - **Molar pregnancy**
  - **Inverted uterus**

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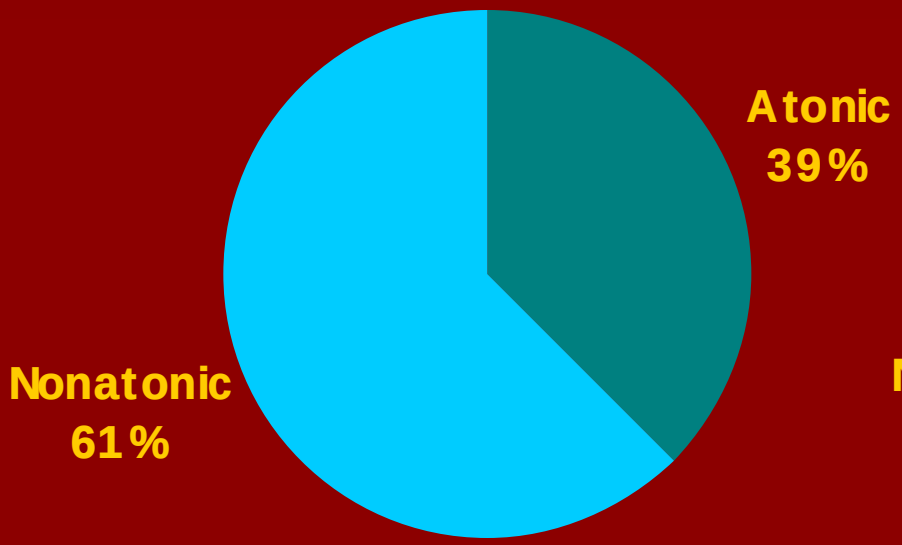
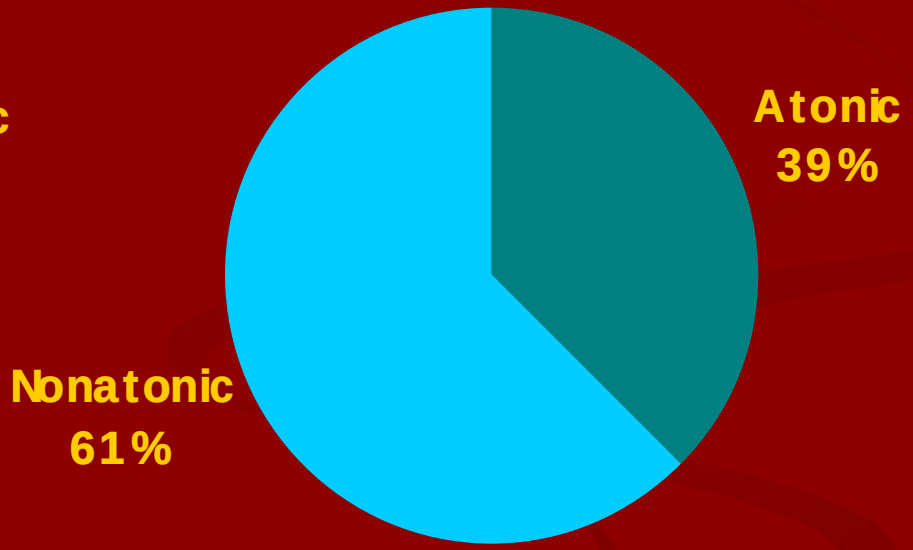
Proportion of Atonic and Nonatonic Cases

Nigeria



Egypt



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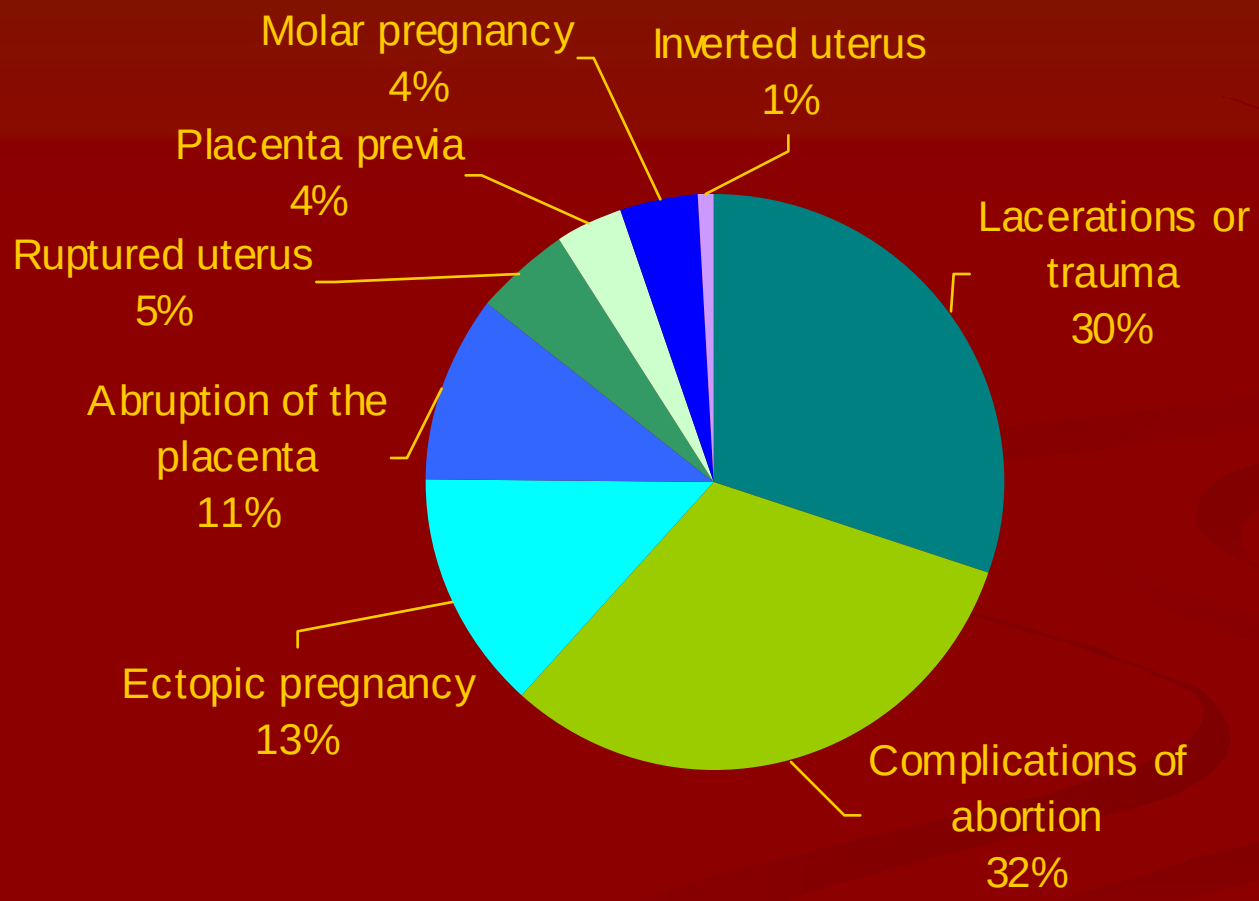
Causes of Nonatonic Hemorrhage – Egypt



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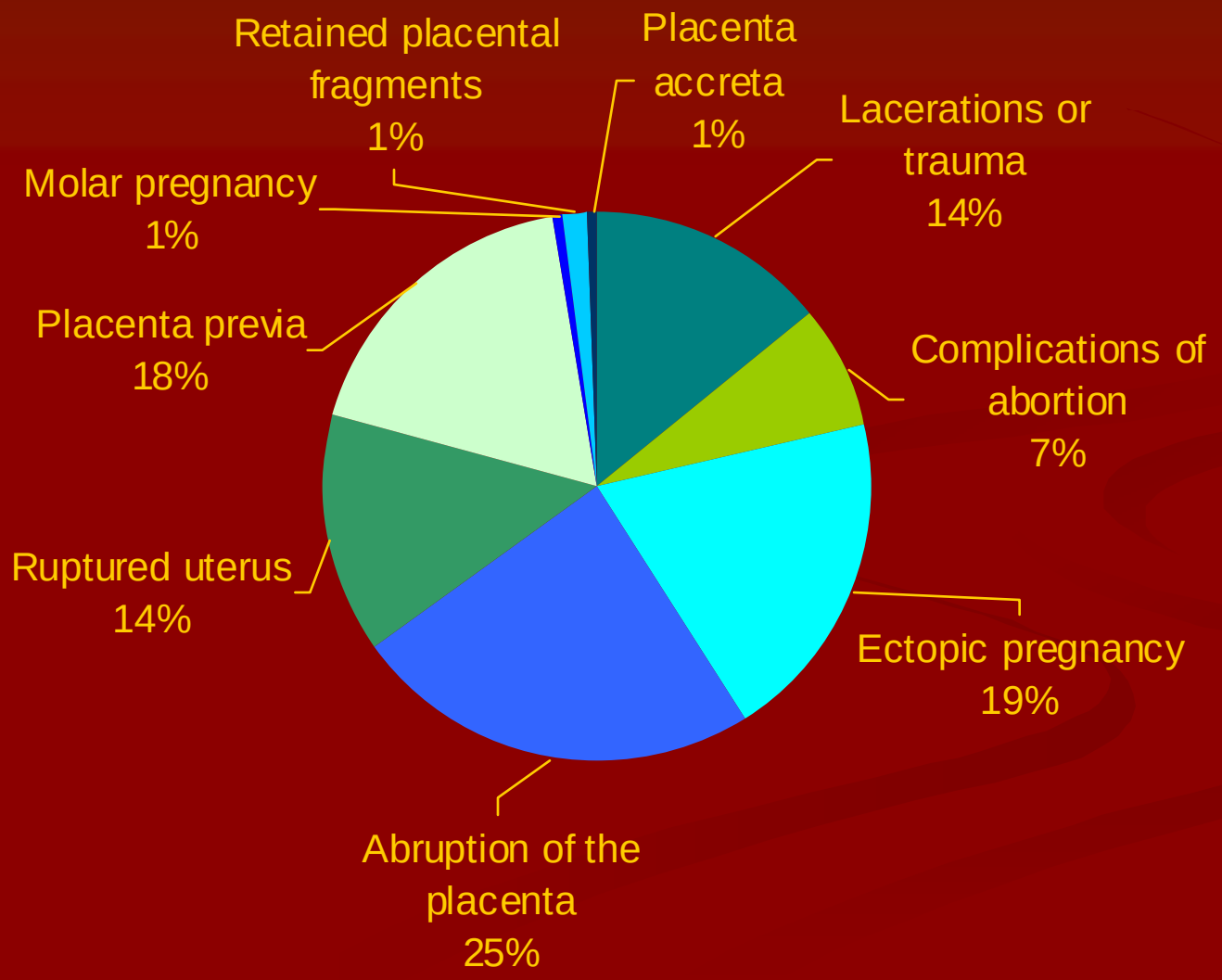
Causes of Nonatonic Hemorrhage – Nigeria



Blood Loss and Shock Management – Egypt (N=209 nonatonic cases)

	Median Values		*Median Difference (95% CI)*
	Pre-NASG (n=85)	*NASG (n=124)*	
Estimated blood loss at entry (N=209)	750 (750-2000)	1125 (500-3000)	-150 (-250 to -50)
Volume fluid received in first hour (N=207)	500 (0-2000)	1000 (0-2500)	-250 (-500 to 0)
Total volume blood received (N=207)	500 (0-5000)	1000 (0-4500)	-500 (-500 to 0)
Minutes to first blood transfusion (N=132)	60 (0-1530)	30 (0-2100)	15 (0 to 30)

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Blood Loss and Shock Management – Nigeria (N=154 nonatonic cases)

	Median Values		*Median Difference (95% CI)*
	Pre-NASG (n=54)	*NASG (n=100)*	
Estimated blood loss at entry (N=133)	1000 (0-3000)	1600 (0-3000)	-500 (-750 to -200)
Volume fluid received in first hour (N=132)	2000 (0-3000)	1500 (0-4000)	0 (0 to 500)
Total volume blood received (N=145)	1000 (0-4000)	1000 (0-3500)	0 (-500 to 0)
Minutes to first blood transfusion (N=126)	150 (0-1136)	145 (0-7510)	15 (-35 to 77)

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Patient Outcomes – Egypt
Nonatonic hemorrhage

	Pre-NASG (n=85)	*NASG (n=124)*	*Median Difference/ Relative Risk (95% CI)*
Measured blood loss in drape (N=195)	500 (0-2150)	290 (0-900)	200 (100 to 250)
Mortality (N=209)	1 (1.1%)	0 (0%)	
Morbidity (N=208)	2 (2.4%)	1 (0.8%)	0.339 (0.03 to 3.68)

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Patient Outcomes – Nigeria
Nonatonic hemorrhage

	Pre-NASG (n=54)	*NASG (n=100)*	*Median Difference/ Relative Risk (95% CI)*
Measured blood loss in drape* (N=93) * For those with non-missing blood loss data only	600 (0-2500)	250 (0-800)	390 (150 to 750)
Mortality (N=153)	3 (5.7%)	8 (8.0%)	1.413 (0.39 to 5.20)
Morbidity (N=143)	3 (5.9%)	1 (1.1%)	0.185 (0.02 to 1.73)

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Patient Outcomes – Combined Nonatonic hemorrhage

	Pre-NASG (n=139)	*NASG (n=224)*	*Median Difference/ Relative Risk (95% CI)*
Measured blood loss in drape*(N=288) * For those with non-missing blood loss data only	500 (0-2500)	255 (0-900)	210 (150 to 300)
Mortality (N=362)	4 (2.9%)	8 (3.6%)	1.232 (0.38 to 4.02)
Morbidity (N=350)	5 (3.7%)	2 (0.9%)	0.250 (0.05 to 1.27)

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Discussion

- Non-uterine atony etiologies account for > 60% of hemorrhagic shock cases in two distinct health care settings
- These cases are women whose bleeding requires some intervention besides medical treatment with uterotonics
- There was a significant reduction in blood loss with the NASG intervention
- No significant difference in administration of fluids/blood
- No significance in mortality or morbidity outcomes, perhaps due to:
  - Small sample size
  - Worse condition of those placed in the NASG

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Implications

- Promising results on blood loss indicate that NASG may be useful in managing nonatonic obstetric hemorrhage
- Conflicting trends in morbidity and mortality in the two countries demand more robust research with larger sample sizes
- Non-atonic management deserves attention from major stakeholders and policy makers concerned with Safe Motherhood

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