

TRANSDERMAL NITROGLYCERINE For Acute Tocolysis - An experience

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Objectives

- ❖ To study safety and efficacy of transdermal NTG in acute tocolysis of preterm labor
- ❖ *StudyType* - *Prospective & descriptive*
- ❖ *Duration* - *3 years*



NTG skin patch

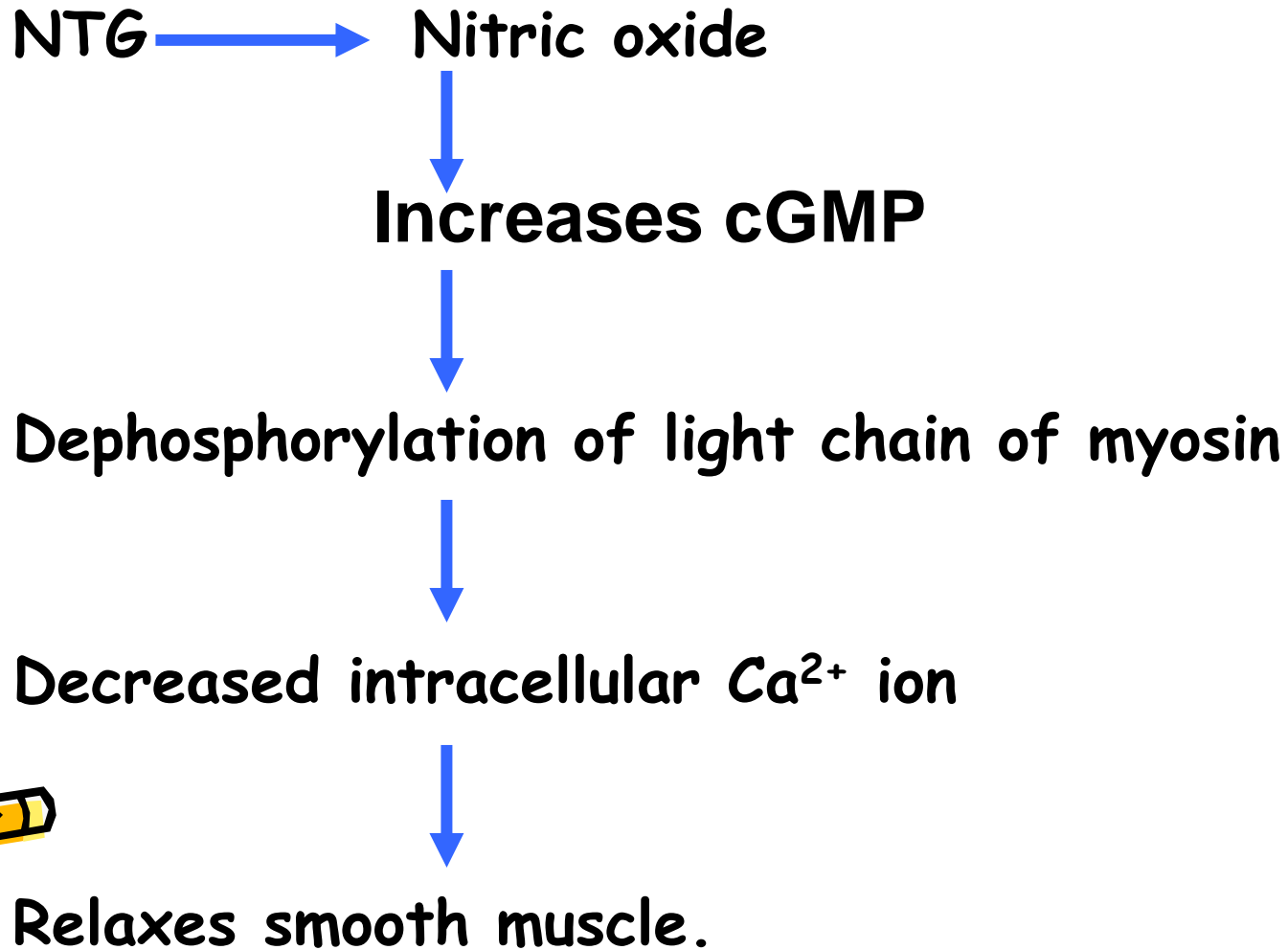
- Contains 50mg nitroglycerine
 - Releases 10 mg/ 24h
 - Drug release area - 20 cm²

- Transdermal preferred to avoid high first pass inactivation in liver

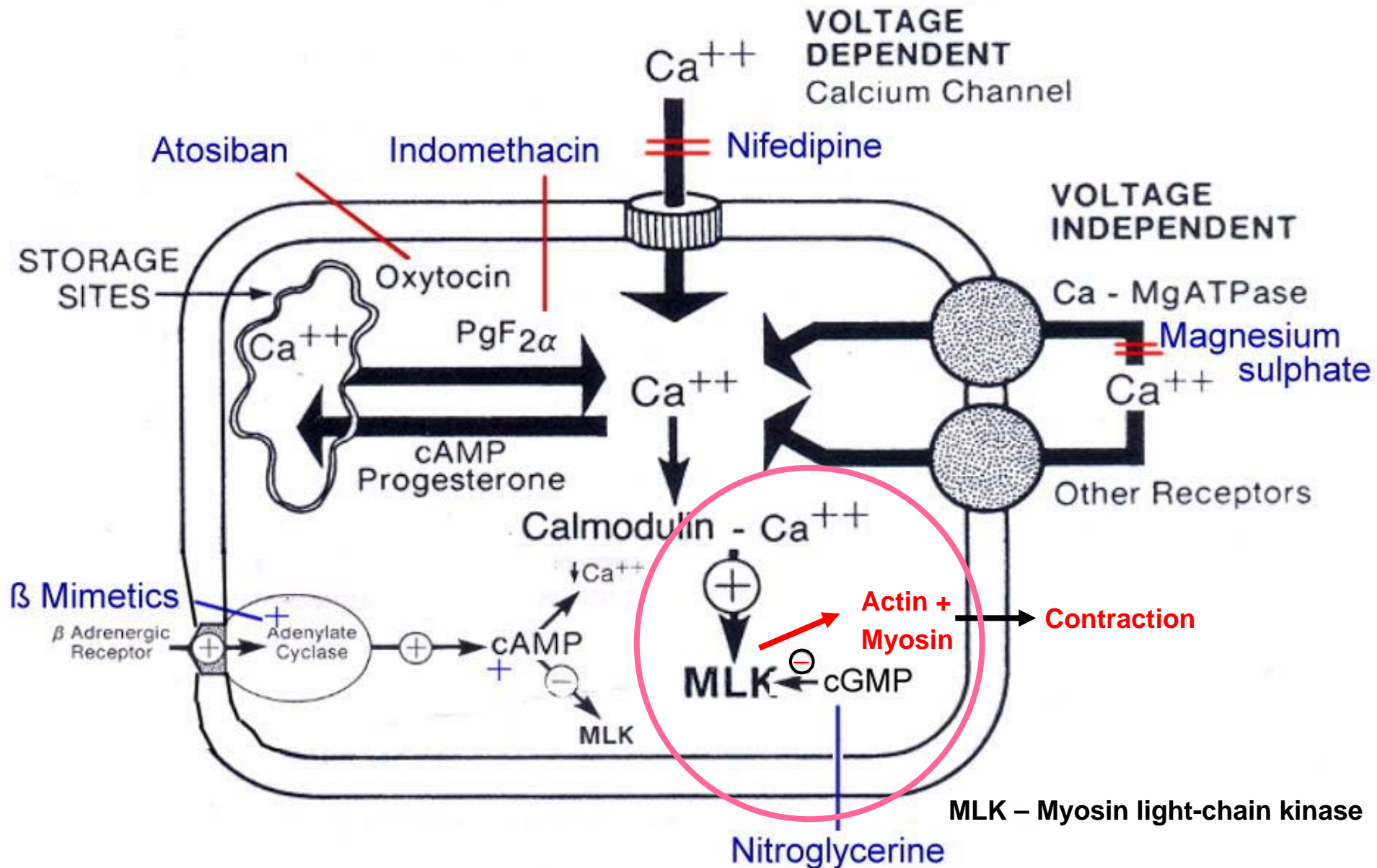
- Endogenous Vasodilator
- Decreases Vascular resistance



NTG - Pharmacokinetics



Mechanism of action - Tocolytics



Materials



❖ *Study Group - Enrolled 60 Cases of preterm labor for acute tocolysis*

❖ *Drop Outs - 2*

❖ *Final Analysis - 58*



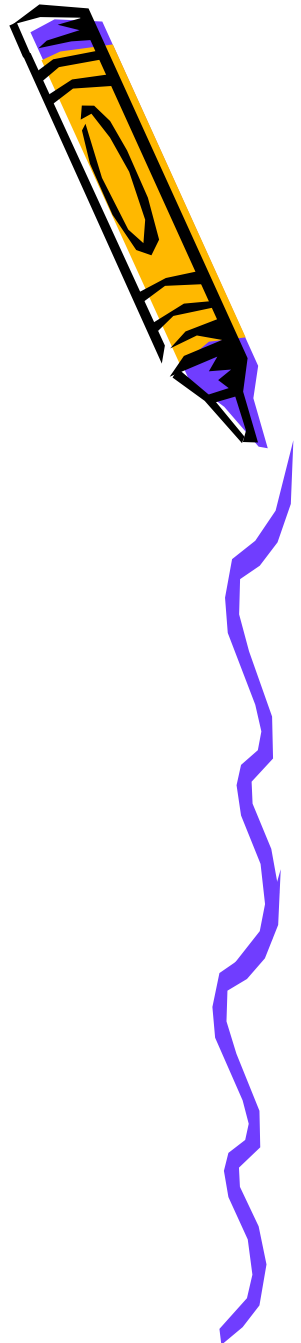
Inclusion criteria

- ❖ Gestational age 28-34 weeks
- ❖ Painful uterine contractions
- ❖ With Cervical Changes



Exclusion Criteria

- ❖ Vaginal Bleeding
- ❖ Leaking
- ❖ Cardiac Problems
- ❖ Evidence of chorioamnionitis
- ❖ Active labor
- ❖ Contraindications for tocolysis

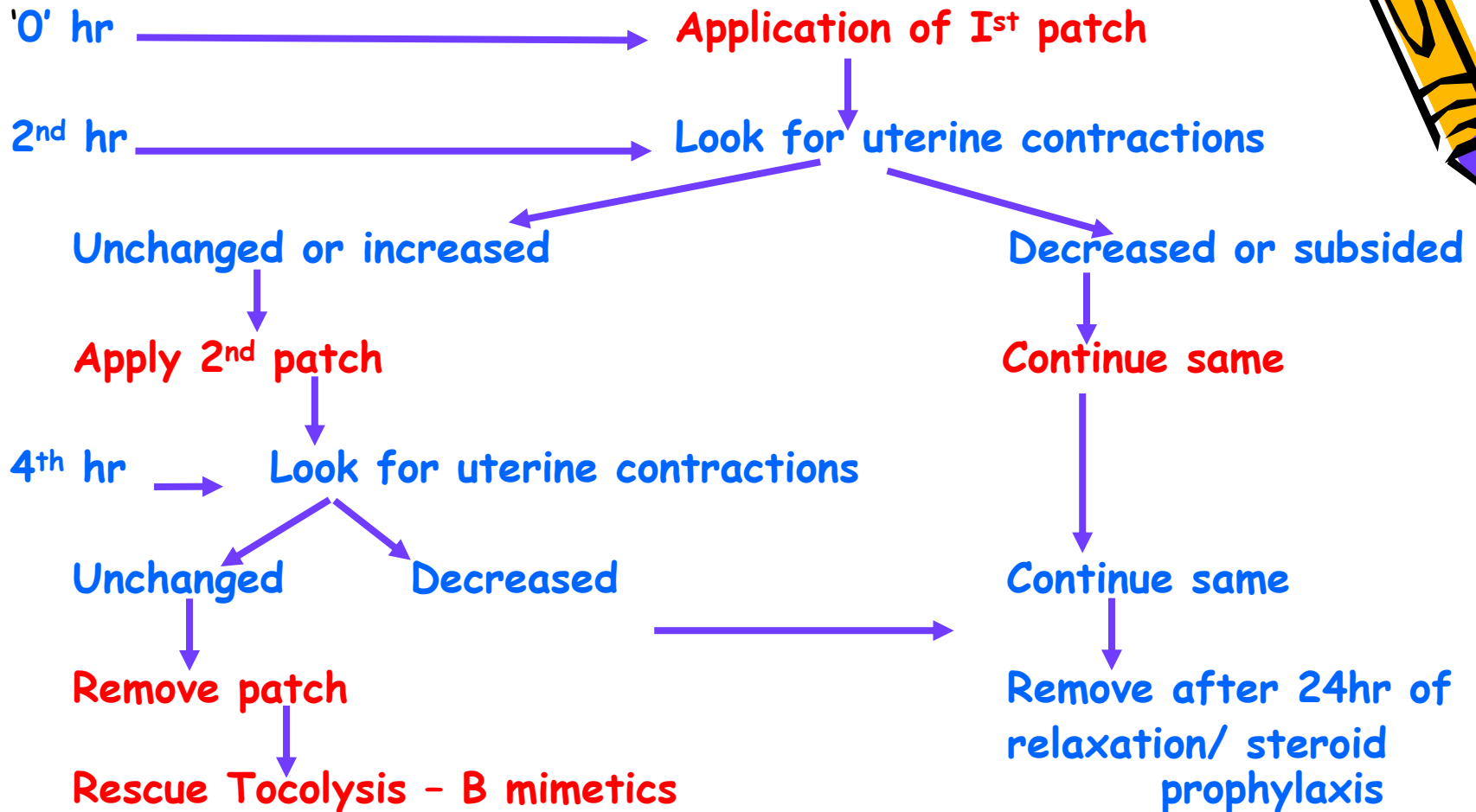


Outcome measures

- * **Successful tocolysis** - Pregnancy continued for at least 48 hours after NTG application - steroid administration
- * **Failed tocolysis** - Delivery occurred within 48 hrs or changed over to rescue tocolysis
- * **Side effects of Nitroglycerine**

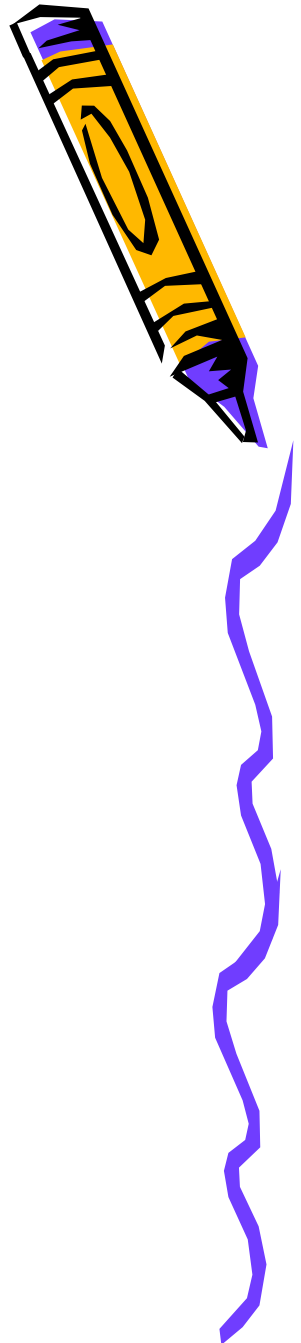


Methodology

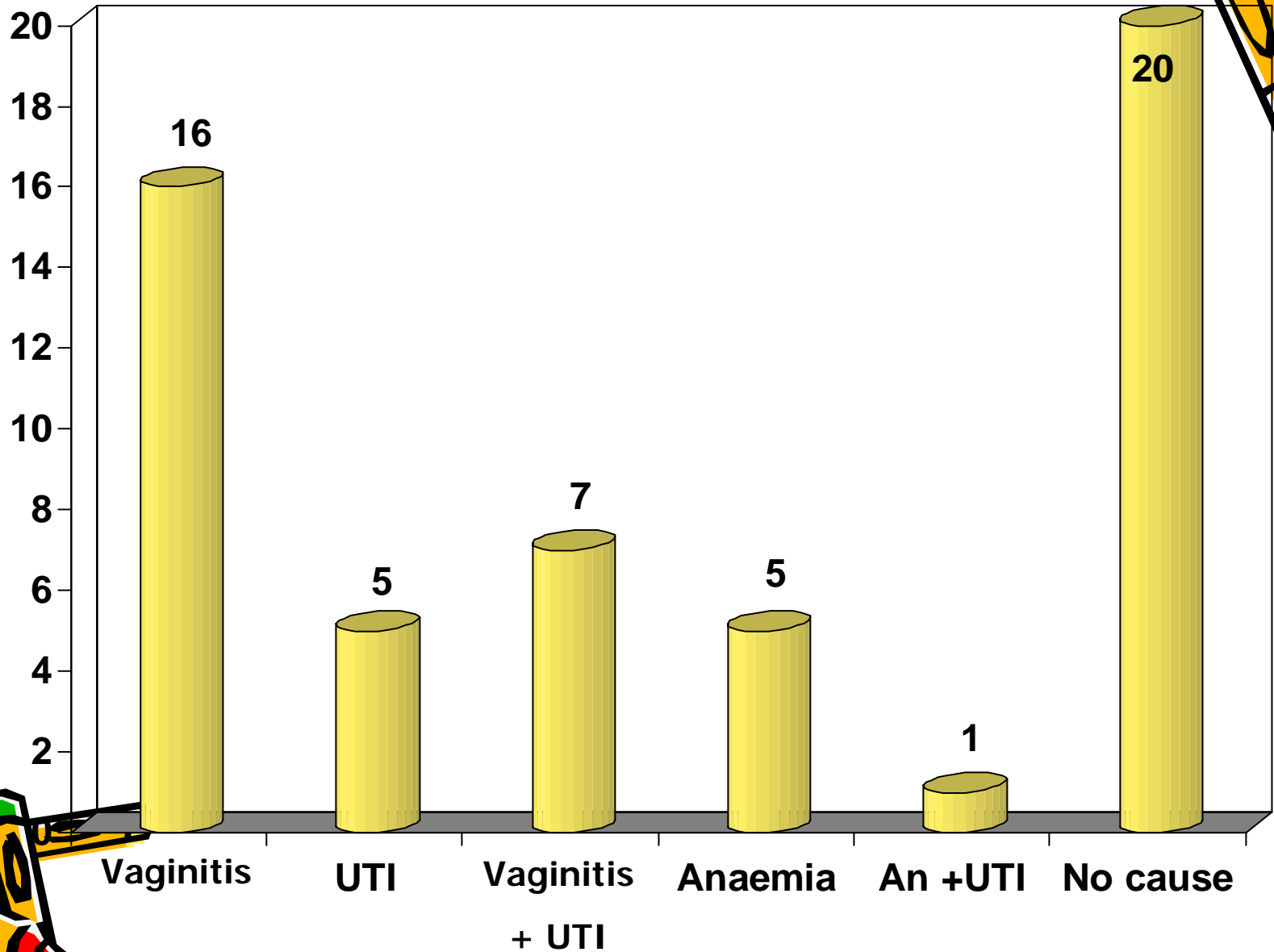


Monitoring after NTG

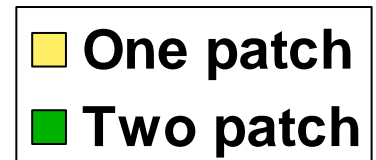
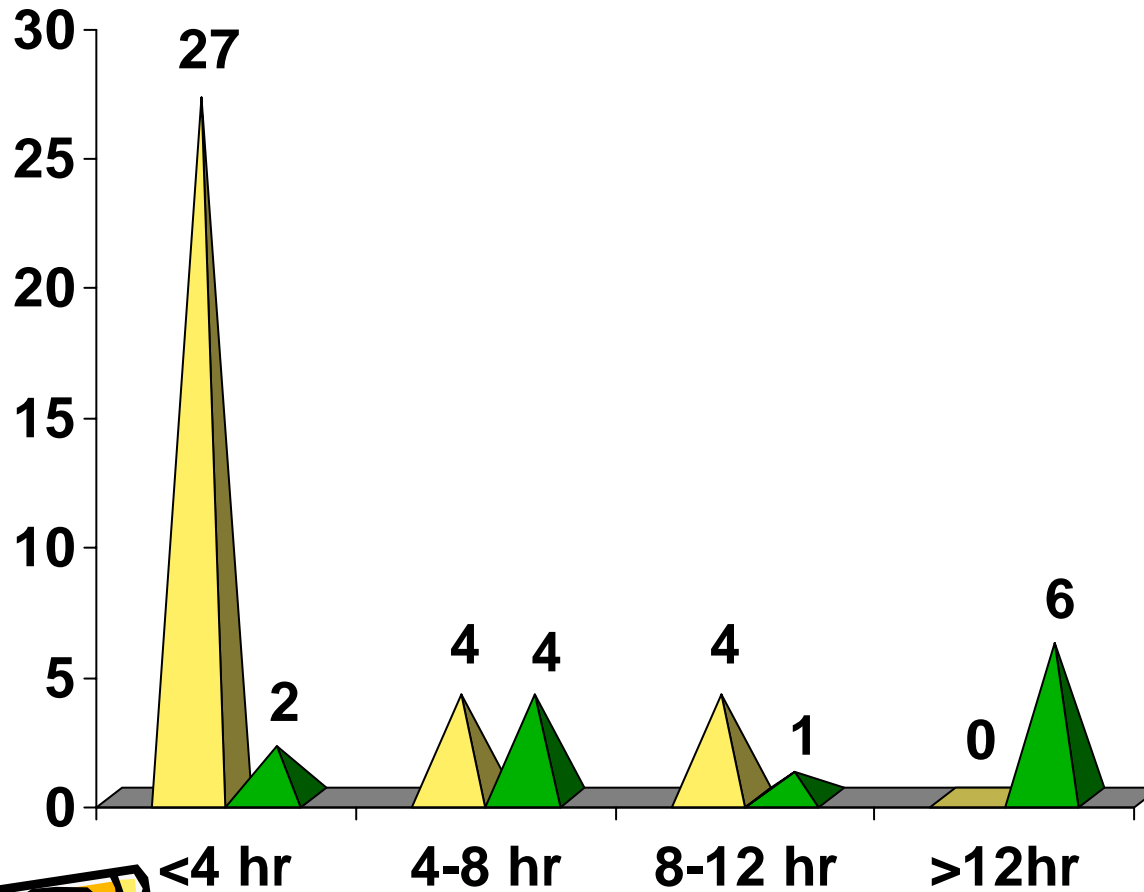
- Pulse, BP
- Uterine contractions
- Fetal Heart
- Adverse Side effects



Associated Conditions



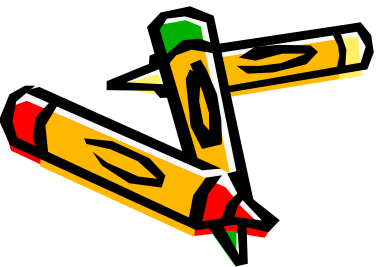
Time taken for relaxation



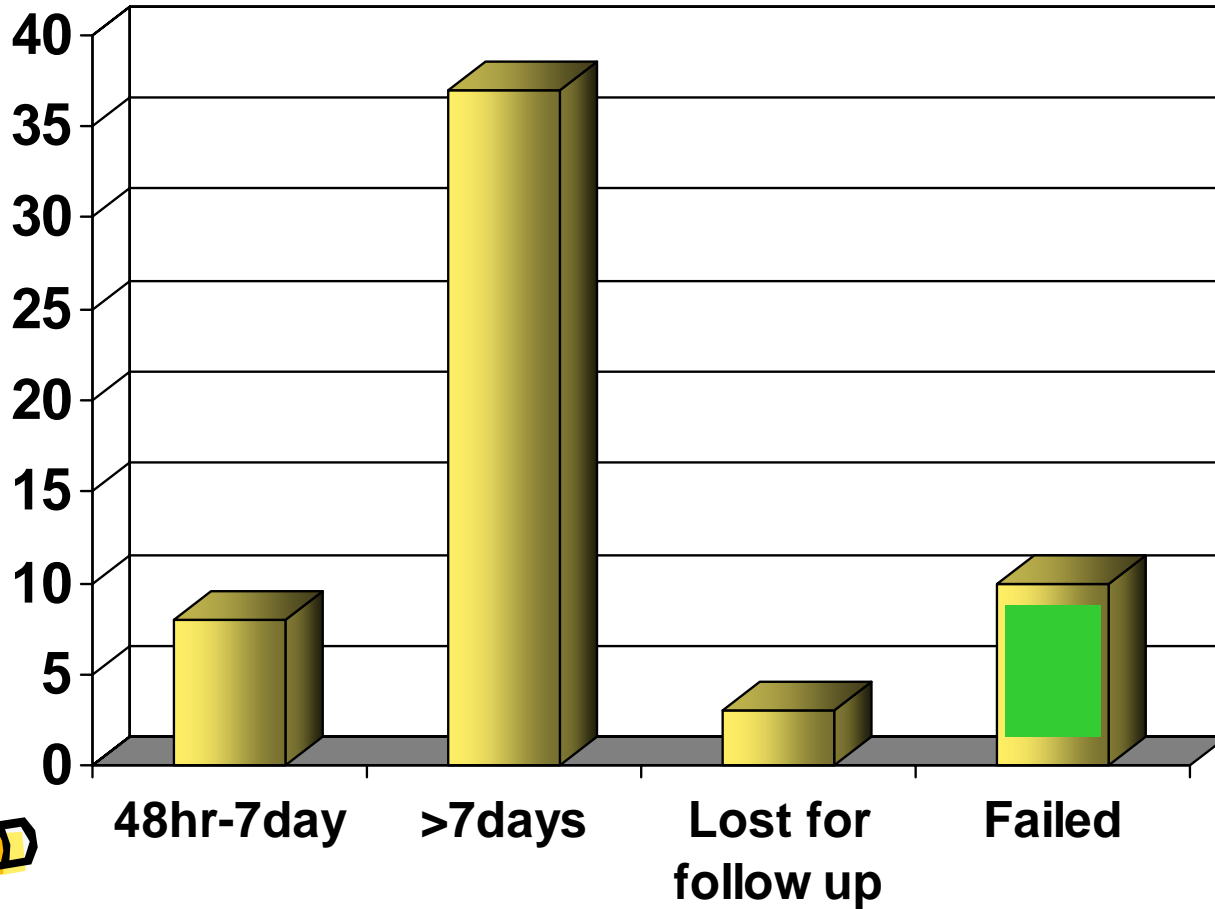
Gestational age at application of the patch



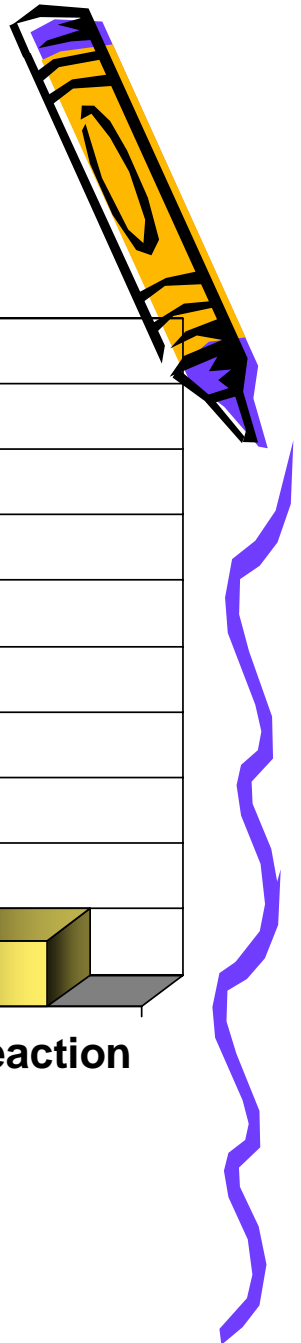
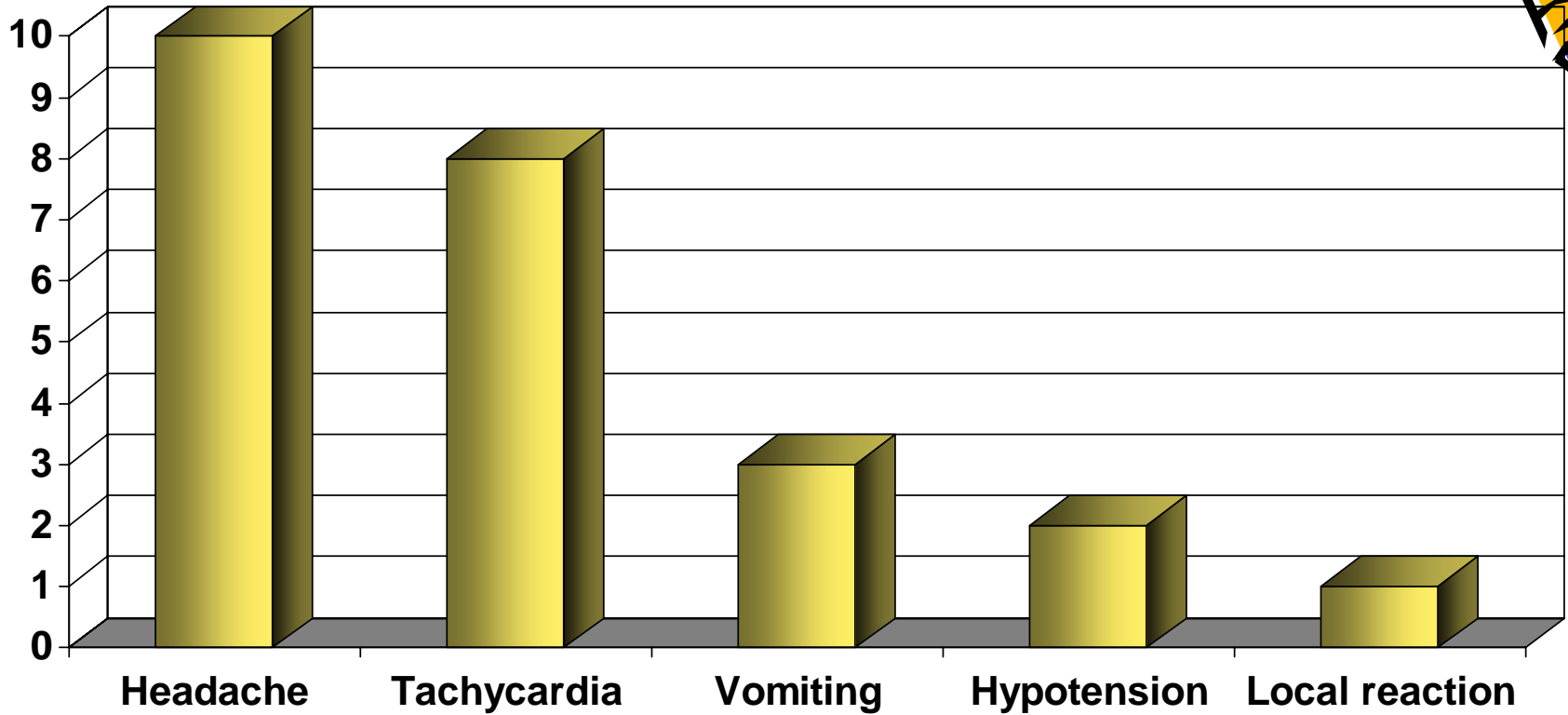
Weeks	Total n=58	Success n=48	Failure n=10	Success %
28 - 30	6	4	2	66
30 - 32	11	9	2	81
32 - 34	41	35	6	85



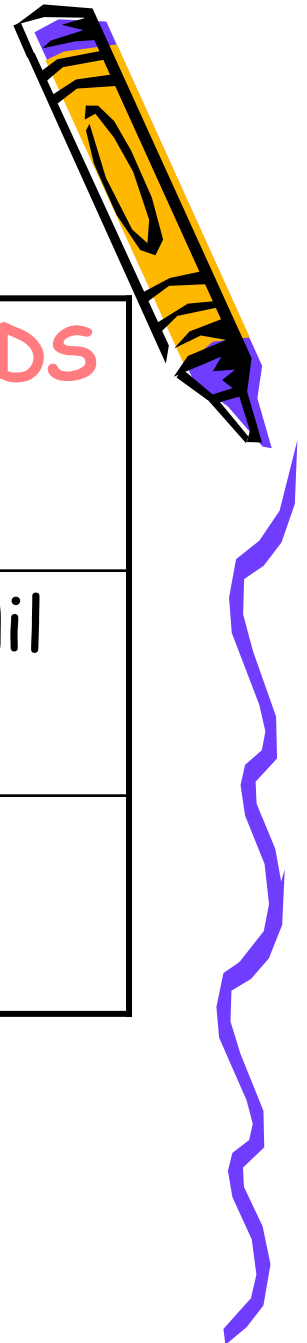
Pregnancy continuation



Side effects

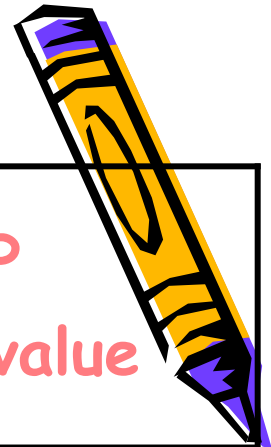


Neonatal morbidity



Outcome of tocolysis	Delivery within	NICU admissions	RDS
Success n = 48	>48 hrs	5 10.4%	Nil
Failure n = 10	<48 hrs	4 57%	1





	Successful Cases n= 48	Failed Cases n=10	P value
Mean modified bishop score	3.66 ± 1.003	5.78 ± 0.98	0.000
Mean gest age age at application	32.83± 1.73	31.90 ± 1.79	0.126
Mean gestational age at delivery	36.68 ± 0.68	31.83 + 0.96	0.000
Mean birth weight (in kg)	2.62 ± 0.126	1.74 ± 0.11	0.000

p value – Independent T test





Conclusion

- ❖ NTG patch Effective
- ❖ Safe, cheap & simple
- ❖ Avoids painful injections
- ❖ Useful for Patient transfer
- ❖ No Major side effect



Limitations

- ❖ Not a Controlled Study
- ❖ Observational Bias
- ❖ Diagnosis of PTL is difficult
- ❖ Spontaneous Remission likely - Large percentage





Recent Evidence



- Cochrane Data - 5 RCTs- **Not effective**

Duckett K CDSR 2002 (3) Art CD 002860

- Two RCTs - **effective**
 - GN Smith et al
 - Lees et al

- Observational Studies : Effective

- **Controversy** - Cervical Ripening effect



Advantages & Other Uses of NTG



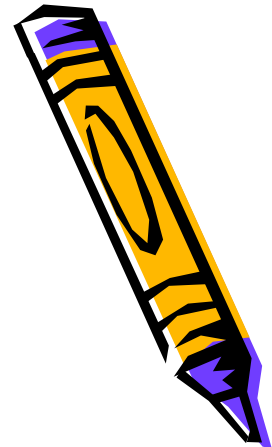
- ❖ **Effects Reversed with Ease :**
less PPH in the event of delivery

Intravenous:

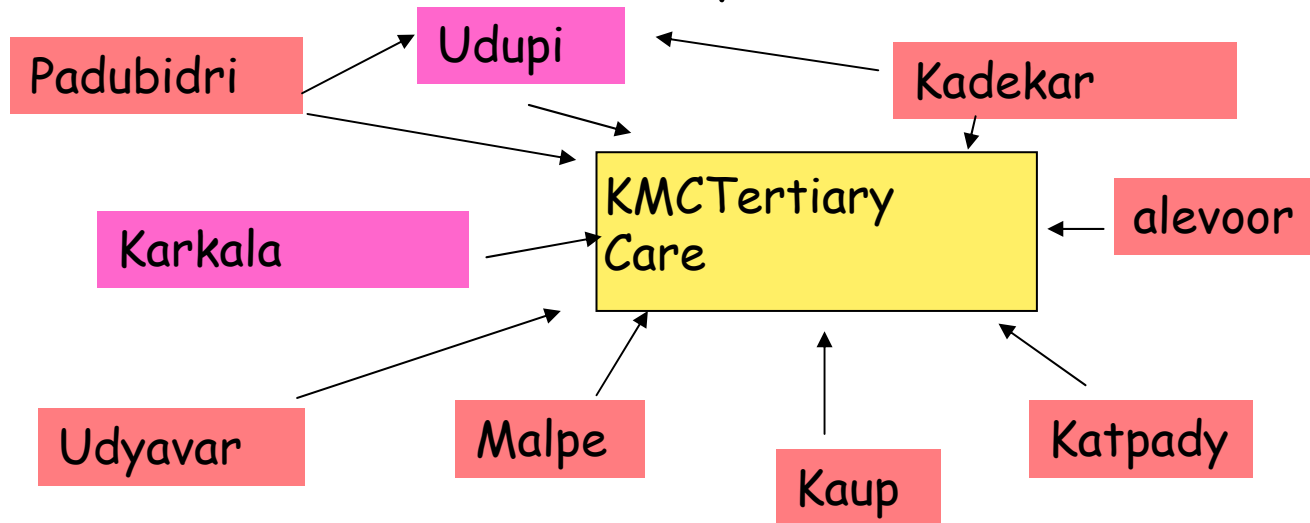
- ❖ **Uterine Relaxant Effect :** uses -
Hypertonic Uterine contractions
Inversion Correction
Manual removal of placenta
- ❖ **Hypertensive Crisis**



NTG for PTL in Primary Care centres



RMCW homes- rural maternity & child welfare homes



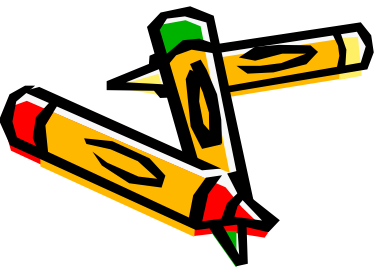
2 ANMs - Normal deliveries

Flying squad service
Immunization clinics

Weekly AN /PN clinics

Monthly USG clinics

Postpartum sterilizations





THANK YOU

