

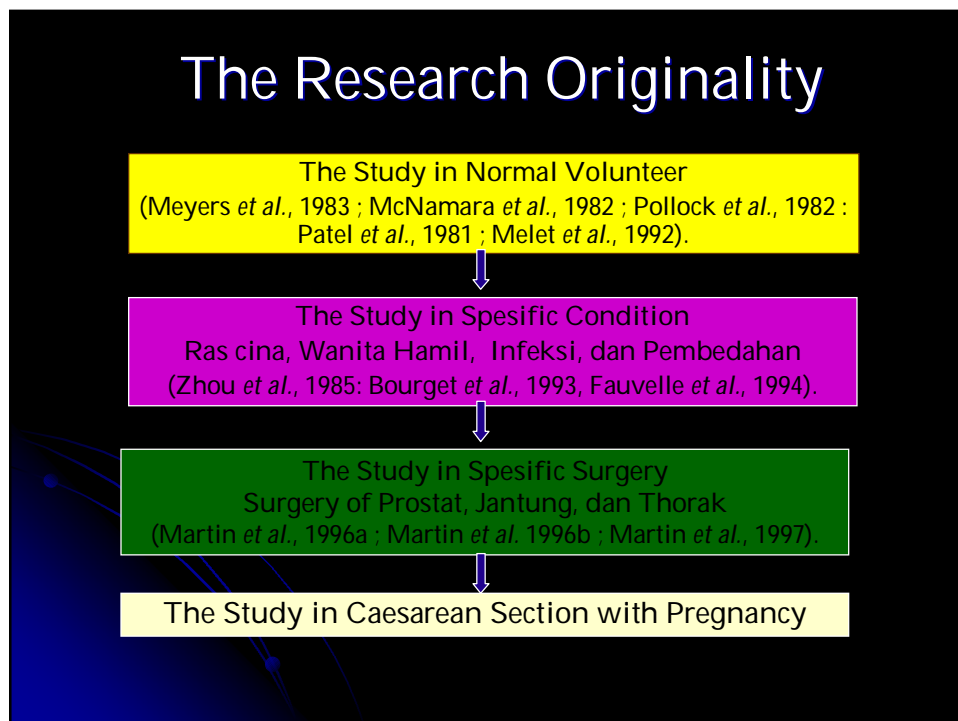
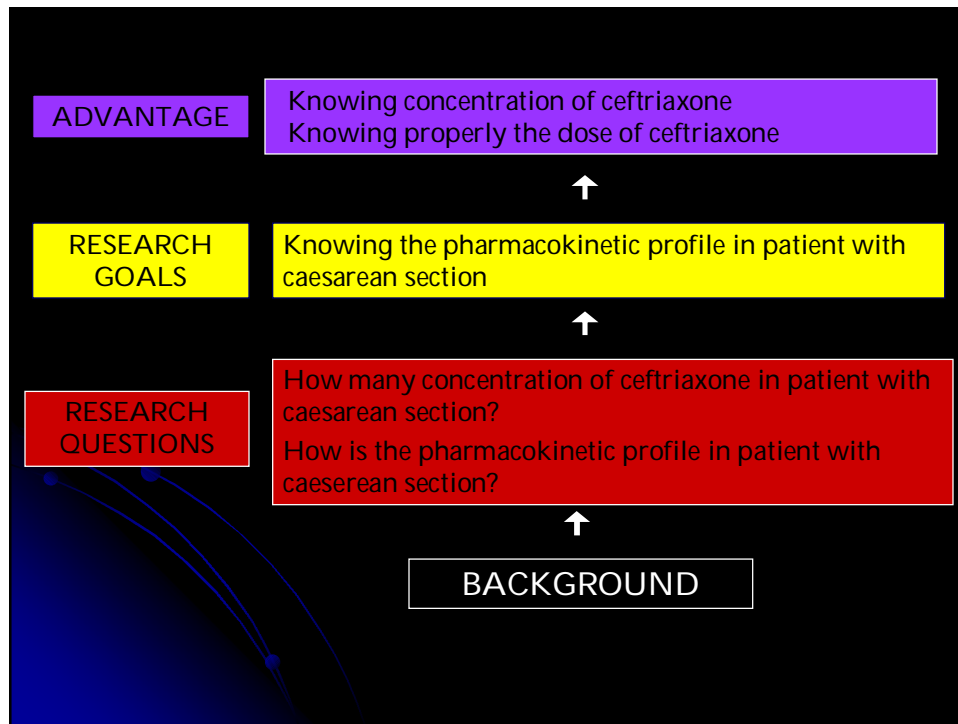
## **CEFTRIAXONE AS PROPHYLAXIS ANTIBIOTIC IN CAESAREAN SECTION: PHARMACOKINETIC AND PHARMACODINAMIC APPROACH**

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### **BACKGROUND**

- **Ceftriaxone for Prophylaxis**
- **Pharmacokinetic Variabilities in Caesarean Section**
  - **Pregnancy**
  - **Surgery**
  - **Medicine**
- **Antibiotics**

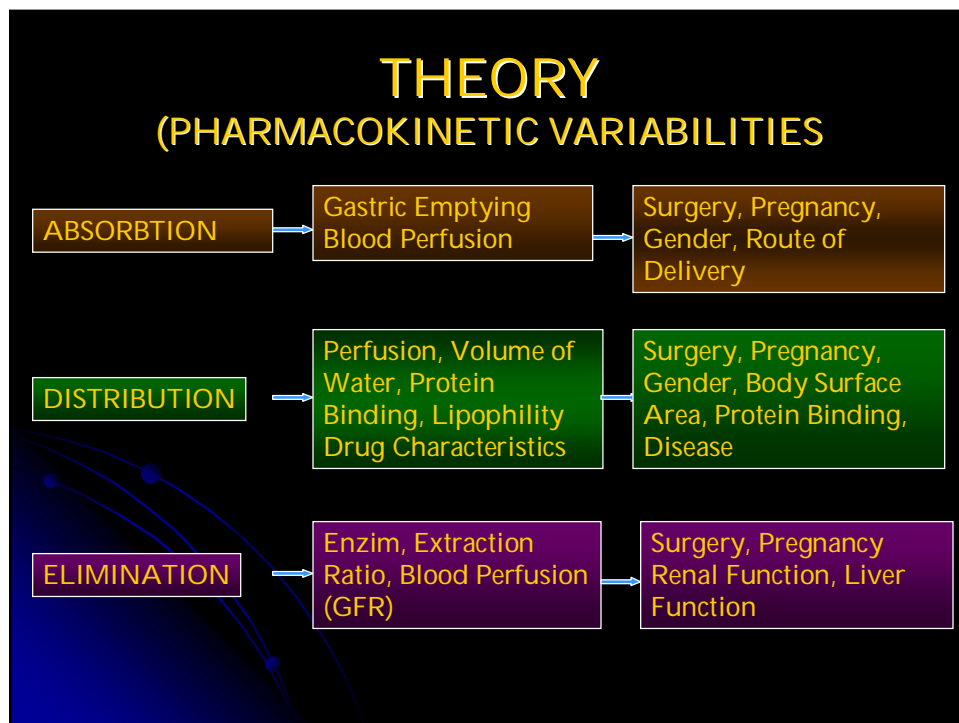
The 8th Asian Conference on Clinical Pharmacy: "Toward Harmonization of Education and Practice of Asian Clinical Pharmacy"



## THEORY

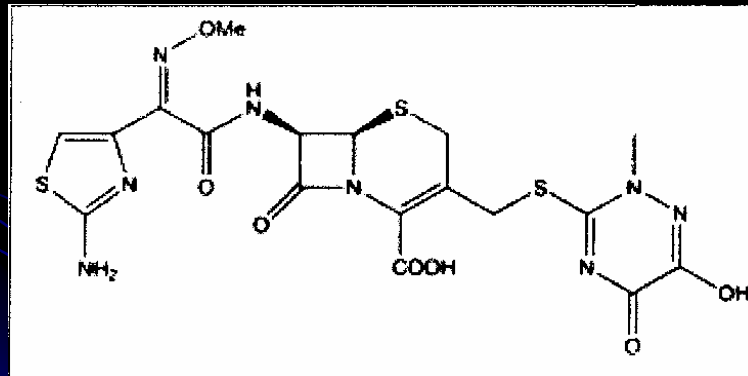
(PROPHYAXIS ANTIBIOTICS AND CAESAREAN SECTION)

- Clean Contaminated Procedure
- First Choice Antibiotics
- Time and Duration
- Dose
- Drug Delivery



## THEORY (CEFTRIAXONE)

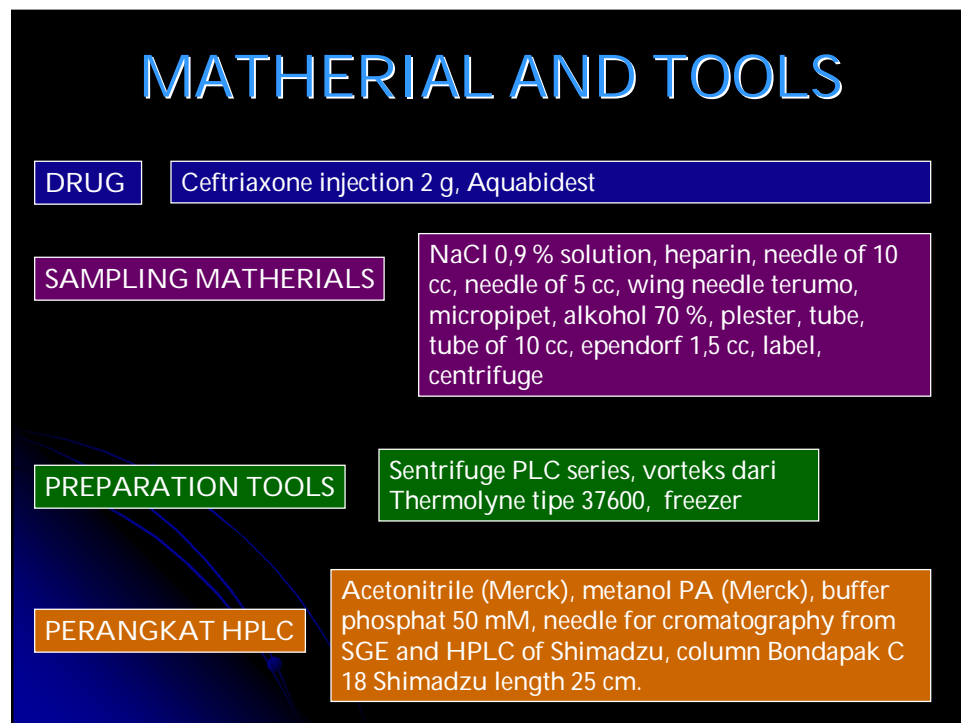
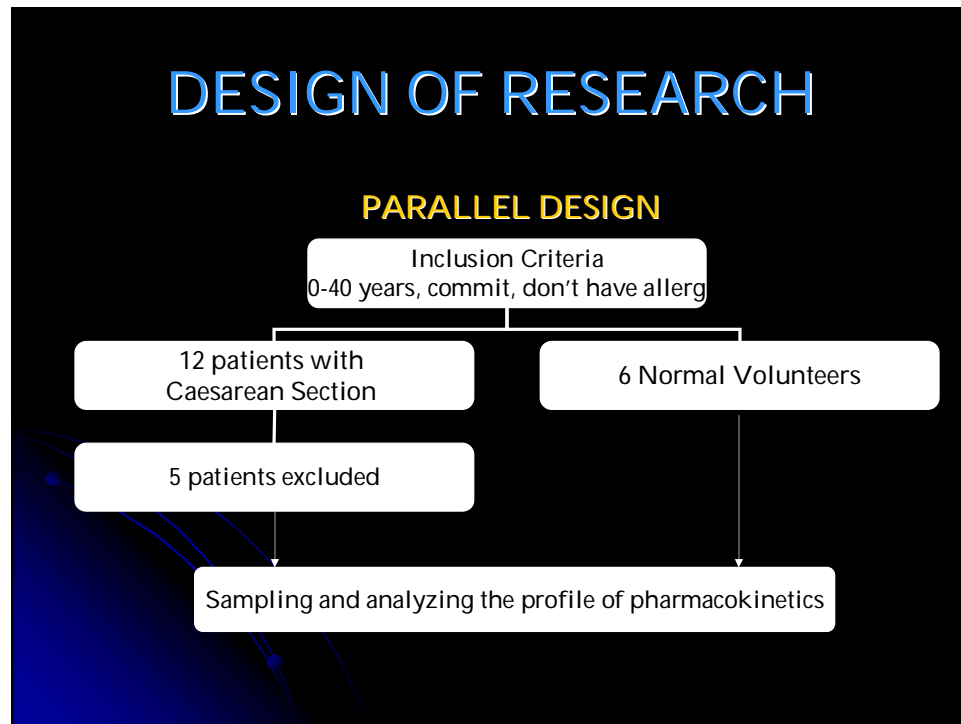
### Structure of Ceftriaxone



## THEORY (CEFTRIAXONE)

### Pharmacokinetic Characteristics

- Absorption ~100%
- Volume of Distribution is little
  - High Protein Binding
- Clearance in Liver and Renal



## ANALYSIS METHOD

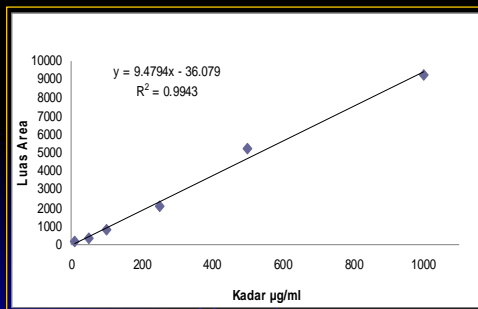
1. Analysis of pharmacokinetic with non kompartement.
2. Analysis of Statistic with independent sample t-test

## RESULT (1)

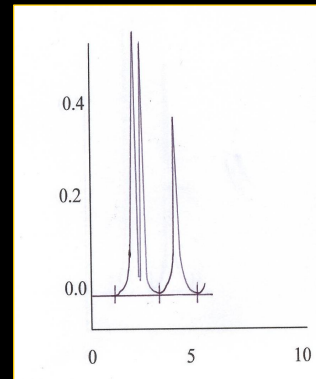
- 5 patients were excluded.
- Patient Condition :
  - 4 patient with preeklamsia
  - 4 patient without preeklamsia
- Validation Data
  - LOD : 0.5 $\mu$ g/mL
  - LOQ : 10-1000 $\mu$ g/mL
  - Rec : 99.2-106%
  - CV : 0.5-5%

## RESULT (2)

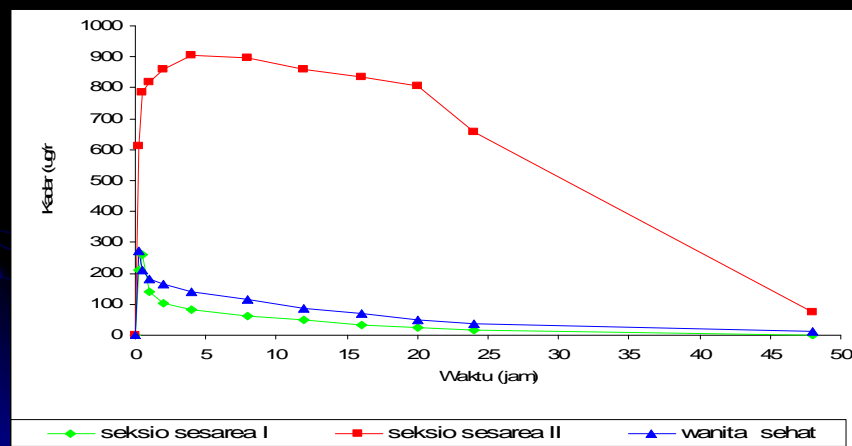
Standard Curve



Cromatogram



## RESULT (3)



## DISCUSSION

### Pharmakokinetic Parameter

Patient	Pharmacokinetic Parameter(Mean±SEM)						
	Kel (hour <sup>-1</sup> )	T1/2 (hour)	AUC (µg.h/mL)	Tmak (hour)	Cmaks (µg/mL)	Vd (L)	Cl (L/hour)
Normal CS	0.086 ± 0.016	8.2 ± 1.65	1546 ± 63.57	0.5	293 ± 74.46	15.46 ± 2.80	1.29 ± 0.057
CS with PE	0.027 ± 0.019	26.23 ± 1.87	40510 ± 7171	4	911 ± 183	1.92 ± 0.31	0.048 ± 0.005
Normal Volunt eer	0.032 ± 0.0019	21.7 ± 1.22	2602 ± 362	0.25	233 ± 123	25 ± 3.5	0.79 ± 0.1

## DISCUSSION

### PHARMACOKINETIC

- Few Influence of Surgery
- Preeclampsia influences the concentration and pharmacokinetics

### PHARMACODYNAMIC

- Value of  $AUC_{24hour}/MIC$  in normal Caesarean section is <125
- Value of  $AUC_{24hour}/MIC$  in preeclampsia is 625

## CONCLUSION

Pharmacokinetic of Normal Caesarean Section is not different with normal volunteer

Pharmacokinetic of Preeclampsia is different

$C_{maks}, AUC_{PE} \geq C_{maks}, AUC_{non\ PE}$

$V_d, CL_{PE} \leq V_d, CL_{non\ PE}$

t.h.a.n.k y.o.u