## Update on contraceptive methods

Regina Kulier



- Oral contraceptive pill (Yasmin®)
  - ethinylestradiol
  - drospirenone
- Vaginal contraceptive ring (NuvaRing®)
  - ethinylestradiol
  - etonorgestrel

## Oral contraceptives - frequency and reasons for discontinuation

- Prospective follow-up study 1995 1996
  initiating or switching
- n = 1657
- ▶ 6 months: n = 887

Rosenberg 1998, Am J Obstet Gynecol;179:577



- Discontinuation after 6 months
- ▶ 32% of new starters
- 16% of 'switchers'

Rosenberg 1998

# Oral contraceptives - frequency and reasons for discontinuation

- 37% side effects (bleeding irregularities, weight gain, nausea)
- ▶ 23% no further need
- 14% 'too difficult', 'too expensive'
- 9% medically indicated
- not specified

Rosenberg 1998



Contraceptive behaviour after discontinuation

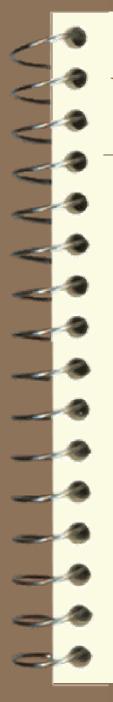
Women who did not wish to conceive n = 250

– Male condom 46%

- None 19%
- Natural FP 17%
- Sterilisation 6%
- IUD, DMPA, Norplant 5%
  - other

Rosenberg 1998

8%



## Yasmin®

Ethinylestradiol 30 mcg
Drospirenone 3 mg

17 alpha-spirolactone

21 days

## Pharmacological profiles of progesterone and synthetic progestogens

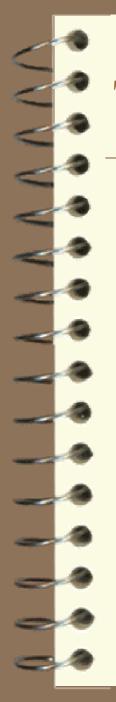
	Androgenic	Antiandrogenic	Antimineralcorticoid	Glucocorticoid
	activity	activity	activity	activity
Progesterone	-	(+)	+	-
Drospirenone	-	+	+	-
Cyproterone acetate	-	+	-	(+)
Desogestrel	(+)	-	-	-
Gestodene	(+)	-	(+)	-
Norgestimate	(+)	-	-	-
Levonorgestrel	(+)	_	_	-



#### Effectiveness

- Randomised, open-label (unblinded), multicentre company-sponsored trial
- 26 cycles n = 900
  - EE 30 mcg/DRSP 3 mg (n = 310)
  - VS
  - EE 30 mcg/Desogestrel 150 mcg (Marvelon $\mathbb{R}$ ) (n = 317)
  - 3 pregnancies each group

Foidart 2000, European J Contracep Reprod Health Care;5:124



## Tolerability

Cycle controlBody weight

Foidart 2000, European J Contracep Reprod Health Care; 5:124



## **C** Vaginal Ring



## Vaginal Ring (NuvaRing®)

- flexible ring (Evatane)
  - outer diameter 54 mm
  - cross sectional diameter 4mm
- ethinylestradiol 2.7 mg
  - -0.015 mg/d
- etonorgestrel 11.7 mg
  - 0.120 mg/d

#### NuvaRing® Pharmacological properties

#### Ethinylestradiol

- max. serum concentrations 35pg/ml after 3 days
- 18 pg/ml after 3 weeks
- Etonogestrel
  - max. serum concentrations 1700 pg/ml after 1 week
  - 1400 pg/ml after 3 weeks

#### Vaginal ring How to use

First insertion between day 1-5
intravaginally for 3 weeks
max. 4 weeks
max. 3 hours outside
removed for 1 week

new ring



#### Vaginal ring How to use



#### Vaginal ring Efficacy, tolerability, acceptability

- European multicentre study
- Prospective, single-cohort follow-up study, company sponsored
- ▶ 1145 women (18-40)
  - 806 completed (70.4%)
  - 13 cycles

Roumen 2001, Hum Reprod 2001; 16:469

## Vaginal ring Efficacy

6 pregnancies

Pearl index 0.65 (95% CI 0.24 -1.41)

## Vaginal ring Efficacy

- North American multicentre study
  1177 women
- ▶ 13 cycles

## Vaginal ring Efficacy

- North American, multicentre study
- 15 pregnancies
- Pearl index 1.75 (95% CI 0.98-2.89)

Dieben T, November 1 2001, Rome

## Vaginal ring Tolerability

- Cycle control (cycle 1 12)
  - irregular bleeding
  - withdrawal bleeding, absence
  - withdrawal bleeding, late

2.6 - 6.4% 0.6 - 2.1% 20.4 - 27.3%

## Vaginal ring Acceptability

Discontinuation30%adverse event15%

- nausea, headache, vaginal discomfort

## Vaginal ring Side effects

Vaginitis 13.7%
Headache 11.8%
Device related event 4.1%

#### Vaginal ring Questions to answer

- Vaginal drug interactions
  - antimycotics
  - spermicides
- Expulsion rate?
- Effect on cervical and vaginal cytology
- Does the position affect the efficacy?
- Male exposure?

## Conclusion

- The two new contraceptives have theoretical advantages
  - Yasmin weight control, blood pressure, acne
  - NuvaRing no daily tablet
  - There is little data on:
    - acceptability (premenstrual symptoms)
    - side-effects (short and long term)
  - independent research evidence