

# EVIDENCE BASED MEDICINE CATS

## On Family Planning & Reproductive Health

Issue No. 2 - April 2004

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In this issue:

- 1- Teenage pregnancy and childbirth risks.
- 2- Chlamydia infection and reproductive risks .
- 3- FP methods and return to fertility.
- 4- COCs and cancer ovary.

للمزيد من المعلومات  
يمكنك الإتصال بأسرة تحرير النشرة

**كاتاليسـت كونسورشيـام**

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**الشركة الدولية للتكنولوجيا الطبية (ميدتك)**

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المنطقة الأولى - شيراتون هليوبوليس - القاهرة

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This is an evidence-based series that is intended to provide you with a concise up to date series of Critically Appraised Topics (CATs) on family planning (FP) and reproductive health (RH) issues. Each issue will include a summary of the latest information available on a particular topic and is followed by a critical appraisal drawn from the most recently available literature.

MEDTEC EBM team members have already a number of ready-made interesting topics that will be made available to you on regular basis. However they are here to help providing you with any information related to the field of FP/RH.

The 'EBM' series of CATs is intended to be interactive, so any question that might arise during your day-to-day practice should be properly answered. We may help you formulating this clinical question and find the best available answer.

Tahseen project is very concerned of using EBM in supplying service providers with the most up to date medical knowledge in FP/RH, to achieve the quality service by the end of the project's years.

Appraised by: MEDTEC EBM Team

To be updated by: April 2005



Teenage pregnancy (below 19 years) has a significantly elevated risk of delivering low birth weight, premature, or small for gestational age infants. Thorough antenatal care is important but it does not completely eliminate the neonatal risks inherent with teenage pregnancy and childbirth, presumably because of the biologic immaturity of the woman, which increases the outcome risks.

إن الحمل في سن مبكرة (قبل ١٩ سنة) يصاحبه ارتفاع ملحوظ في معدلات ولادة أطفال ناقصي الوزن، وزيادة في نسبة الولادة المبكرة مع نقص نمو الأطفال داخل الرحم. ورغم أهمية رعاية الحمل لتقليل هذه المخاطر إلا أننا لا نستطيع تجنبها تماما نظرا لعدم اكتمال النضج البيولوجي للأم في هذه السن والذي يزيد من معدلات هذه النتائج السيئة.

#### Background Knowledge:

**T**raditionally "adolescent pregnancy" is defined as pregnancy in girls below 19 years of age. It is considered by others as below 18 years of age because the skeletal maturity of the girl is completed by the age of 18 years. Becoming pregnant at teenage can result in an intrinsic increase in the risk of adverse outcomes of pregnancy quite apart from the increased risk due to the adverse social and behavioral factors that are frequently associated with teenage pregnancy. Consequently, efforts to improve the sociodemographic environment of teenagers may reduce their poor reproductive outcomes but will not eliminate it.

It is mandatory to supply all physicians with an updated review of adolescent sexuality to provide effective FP/RH counseling for those adolescents. Numerous current reviews and protocols for prescribing and managing contraception for young newly weds are available. Ideally, young newly married women should be subjected to a detailed history taking and complete examination before using any contraceptive, (N.B. Before IUD insertion, gynecologic examination is essential ), with appropriate counseling, RH education, and follow-up to ensure compliance, problem solving, and periodic reassessment of their contraceptive needs.

#### Citation/s:

Association of Young Maternal Age with Adverse Reproductive Outcomes

Fraser AM, Brockert JE, and Ward R.H., *N Engl J Med* 332 (17): 1113-1118, 1995

#### Three-part Clinical Question:

In young (adolescent) pregnant women, is there any effect on perinatal outcomes compared with older women?

#### Search Terms:

Adolescent pregnancy AND perinatal outcome risks.

#### The Study:

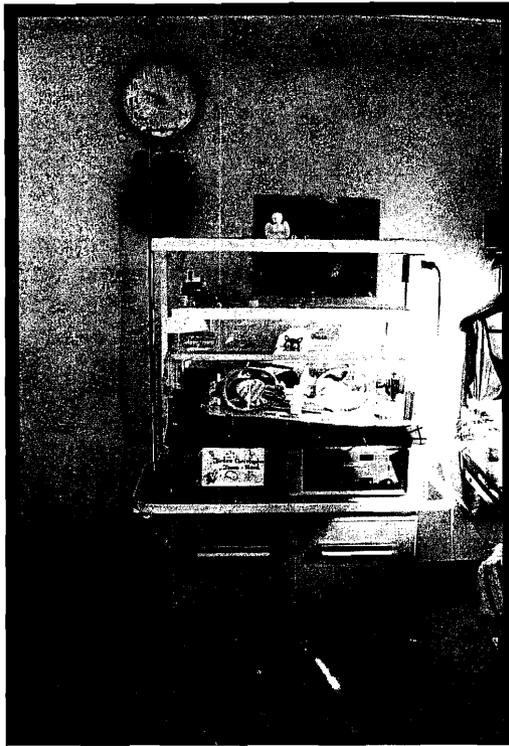
Retrospective Cohort Study

#### The Study Patients:

The study was done on the babies born in Utah between 1970 and 1990.

150508 were white, singleton, first-born infants whose mothers were 13-24 years. Of these infants, 134088 were selected for the study because their records contained complete data. Of them, 67% (90315) were born to mothers 20-24 years old, 11.3% (15106) were born to younger teenage mothers (<17 years), and 21.4% (28667) were born to older teenage mothers (18-19 years).

Mothers from 20 to 24 years old served as the reference group in all comparisons. The frequency of low birth weight, premature and small for gestational age were assessed in all groups.



Exposure of interest:  
Teenage pregnancy

The Outcome:  
Adverse perinatal outcome

Study features:

Multiple independent reviews of reports	Yes
Tested for heterogeneity	Yes
Exposure and outcomes were objective	Yes

The Evidence:

Outcome	Age at delivery	RR	95% CI	NNH
Low Birth weight	< 17 Vs > 19	1.83	1.71-2.06	29
	17-18 Vs > 19	1.28	1.20-1.37	91
Prematurity	< 17 Vs > 19	2.20	1.95-2.25	16
	17-18 Vs >19	1.66	1.62-1.82	30
Small for gestational age	< 17 Vs > 19	1.45	1.43-1.61	20
	17-18 Vs > 19	1.27	1.25-1.34	33

NNH: Number Needed to Harm

(The number of patients who if they received experimental treatment, would lead to one patient being harmed)

Comments:

1- The risk of developing poor obstetric outcomes increases markedly with marital ages below 17 years and still higher than ordinary for ages 17-19 years. Other authors had found bad perinatal outcomes associated with teenage pregnancies. This study included about 150000 cases in the analysis. No other studies even the more recent ones was comparable to it except ref. No 3. This gives extra strength to its findings.

2- There are multiple sociodemographic factors which have some effect on reproductive outcome, including marital status, smoking, education and prenatal care adequacy. Most of these factors may not represent measurable counts in our country except adequacy of antenatal care. Despite the good analysis of all cofactors, the authors studied only white women and this might have affected the results (selection bias).

Other relevant studies:

1. Grimes DA, ed Contraception and adolescents: highlights from the NASPAG conference. *The Contraception Report*. 1995; 6:4-11
2. Lee MC, Suhng LA, Lu TH, Chou MC. Association of parental characteristics with adverse outcomes of adolescent pregnancy. *Fam Pract*. 1998 Aug; 15 (4):336-42
3. Jolly Mc, Sebire N, Harris J, Robinson R, and Regan L (2000) Obstetric Risks of Pregnancy in Women Less Than 18 years old, *Obstetrics & Gynecology*, 96:962-966
4. Smith, G.C S, Pell, J.P (2001). Teenage pregnancy and risk of adverse perinatal outcomes associated with first and second births: population based retrospective cohort study. *BMJ* 323: 476-476
5. Phipps, M.G., Blume, J. D., DeMonner, S.M. (2002). Young Maternal Age Associated with increased risk of post neonatal death. *Obstetrics & Gynecology* 100: 481-486

Repeated attacks of Chlamydial infection of the female genital tract is associated with more incidence of ectopic pregnancy, pelvic inflammatory disease and infertility.



العدوى المتكررة للجهاز التناسلي للمرأة بميكروب الكلاميديا تؤدي إلى زيادة نسبة الإصابة بالحمل خارج الرحم والتهاب الحوض الحاد والعمق

There is an association between recurrent or persistent endocervical chlamydial infection in women and an increased risk of both inflammatory and scarring sequelae in the upper genital tract. There is an increased risk of hospitalization for pelvic inflammatory disease, ectopic pregnancy and infertility.

هناك علاقة بين العدوى المتكررة أو المزمنة بميكروب الكلاميديا في عنق الرحم وبين زيادة معدلات الالتهابات والتليفات في الجهاز التناسلي للمرأة ، مما يؤدي إلى زيادة نسبة الإصابة بالحمل خارج الرحم والتهاب الحوض الحاد والعمق.

#### Background Knowledge:

**C**hlamydial infection remains a substantial reproductive health problem. It has been linked to genital tract infections especially pelvic inflammatory disease. Fallopian tubes may be affected by fibrous scarring which may lead either to ectopic pregnancy if partial or to infertility if tubal occlusion is complete. The risk of infertility is related to the severity of acute inflammation and increases after repeated episodes of salpingitis. Detection of any genital chlamydial infection presents a unique opportunity to implement interventions that will markedly reduce the risk of subsequent recurrence. Screening of sexually active couples and using single-dose therapy for them are mandatory. Despite hormonal contraceptives may increase cervical ectopy and susceptibility to chlamydial infection, yet hormonal contraceptives have been associated with protection from chlamydial PID, due to thickened cervical mucus and lack of retrograde menstruation from reduced menstrual flow. Local vaginal spermicidal contraceptives particularly nonoxynol 9, has been found to be protective against PID due to its bactericidal and viricidal properties.

#### Citation/s:

Hillis SD, Owens LM, Marchbanks PA, Amsterdam LF, Mac Kenzie WR (1997) Recurrent chlamydial infections increase the risks of hospitalization for ectopic pregnancy and pelvic inflammatory disease. *Am J Obstet Gynecol.* 1997;176 (1 Pt 1): 103-7.

#### Three-part Clinical Question:

In patients with chlamydial infection, is there any increased risk for developing tubal damage or ectopic pregnancy?

#### Search Terms:

Chlamydial infection AND tubal damage AND ectopic pregnancy.

#### The Study:

Cohort Study

#### Study selection:

This study used data from the Chlamydia case registry to identify all female Wisconsin residents between 10 and 44 years old who were reported by public providers as having *C. trachomatis* infections between 1985 and 1992. The study was linked with the statewide Hospital Discharge Summary database to ascertain subsequent hospitalizations for ectopic pregnancy or pelvic inflammatory disease, and intrauterine pregnancy. During these years diagnostic testing for women served in family planning and sexually transmitted disease clinics was performed by the same two public laboratories.

#### The Study Patients:

The study population included 11,000 women and comprised all those with three or more reported chlamydial infections (n = 644), all those with two reported infections (n = 2044), and a random sample of approximately half those with one reported infection (n = 8312). Women with two or more chlamydial infections separated by one month were classified as having recurrent infections. Cases having single attack served as the reference group in all comparisons.



Comments:

1- This study documented an association between recurrent or persistent chlamydial infection and increased risk of PID and ectopic pregnancy. Both conditions increase risk of tubal factor infertility. After adjustment for confounders, these associations remained significantly elevated.

2- The use of ectopic pregnancy as a marker of tubal damage may underestimate the injury associated with chlamydial recurrence because infertility with complete tubal occlusion may reduce the occurrence of ectopic pregnancy. So, tubal factor infertility per se should be taken as a separate indicator.

3- The women who were considered as having single infections may have had undetected recurrent infections and this may underestimate the increase in risks of hospitalization, associated with chlamydial recurrence.

Exposure of interest:

Repeated versus single attacks of genital Chlamydia trachomatis infection.

The Outcome:

Tubal damage or ectopic pregnancy.

Study Features:

Multiple independent reviews of reports	Yes
Tested for heterogeneity	Yes
Exposure and outcomes were objective	Yes
Follow up was long enough & complete	Yes

The Evidence:

			Present	Absent	RR	95%CI	NNH
Attack comparison							
PID	Twice versus single attack	Yes	11	2033	4.97	4.88-5.06	233
		No	9	8303			
	Thrice versus single attack	Yes	7	637	10.04	9.8-10.24	102
		No	9	8303			
ECTOPIC Pregnancy	Twice versus single attack	Yes	10	2034	3.7	3.6-3.76	280
		No	11	8302			
	Thrice versus single attack	Yes	9	635	10.6	10.4-10.8	79
		No	11	8302			

No significant delay on return to Fertility in terms of pregnancy rates in previous users of Depo Provera contraceptive injectables compared to IUD and Pill users



لا يوجد تأخير كبير في عودة الخصوبة من حيث معدلات حدوث الحمل في السيدات اللاتي استخدمن حقن ديبوبروفيرا لمنع الحمل مقارنة باللاتي استخدمن اللولب أو الأقراص

At 12 months after stopping contraception, the proportion of women who did not conceive among those who had used DMPA was similar to those who had used IUDs, but higher than ex-pill users. At 36 months these rates were all quite similar.

بعد فترة ١٢ شهر من ايقاف استعمال وسائل منع الحمل المختلفة ، وجد أن نسبة السيدات اللاتي لم يحملن بعد ايقاف حقن ديبوبروفيرا تتساوى مع من استخدمن اللولب الرحمي ، وتزيد نسبتهم عن أوقفن استعمال اقراص منع الحمل المركبة ، ولكن تتساوى النسب جميعها بعد فترة ٣٦ شهر من الايقاف .

#### Background Knowledge :

**R**eturn of ovulation and fertility following discontinuation of DMPA occurs approximately 5 months after the expected effect of the last injection, but the variance extends over several months. In the majority of women, ovulation does not occur as long as plasma level of MPA is above 100 pg/ml. Indian women had a return of luteal function in the presence of higher doses (MPA>600 pg/ml).

DMPA does not have any permanent effects on a woman's ability to get pregnant. However, it may take longer for a woman to get pregnant after she stops using DMPA than if other methods were used. For example, one study found that in women who stopped using DMPA and wished to get pregnant, 68% did so within 12 months, 83% within 15 months, and 93% within 18 months.

The delay in getting pregnant after stopping use of DMPA depends on many factors, including woman's health, age and ability to get pregnant before using DMPA.

#### Citation/s:

Pardthaisong T. Return of fertility after use of the injectable contraceptive Depo Provera: *updated data analysis*. *J Biosoc Sci* 1984;16:23-34.

#### Three-part Clinical Question:

What is the return to fertility rate of women who have used one of 3 different family planning methods, DMPA, oral contraceptives, or an IUD?

#### Search Terms:

Fertility return AND DMPA

#### The Study:

Cohort Study

#### The Study Patients:

All patients were Thai women: 796 former DMPA users; 437 former oral contraceptive users; 125 former IUD users. The patients' demographic characteristics were not described in this paper.

#### Exposure of Interest:

Exposure to DMPA, Combined oral contraceptives or IUDs. Main calculations based on DMPA vs IUDs. Also, length of exposure to DMPA and return to fertility were examined.

#### The Outcome:

Failure to return to fertility rate, 36 months after discontinuation of the FP method.



Comments:

Even though this is a rather old study (1984), The fertility rates are quite convincing. At 12 months after stopping contraception, the proportion of women who did not conceive among those who had used DMPA was similar to those who had used IUDs (23.8 per 100 women vs 24.2 resp.), but higher than ex-pill users (15.1 per 100 women).

At 36 months these rates were all quite similar, in particular the rather high 36 month NNH for DMPA vs. IUDs (the most common birth control method in Egypt). From every 409 cases, one may be harmed with delayed fertility. In addition, there is no relationship between the length of time on DMPA use, and the return to fertility rate.

The study is a cohort-like study, which is suitable in such harm conditions. Missing from this study is the description of the demographic characteristics of the methods users.

Also, there was no blinding of the assessors of fertility rates as to method of contraception.

Study features	Yes	No	Can't tell
Subjects defined and similar in other important ways?			X
Exposures and outcomes (objective or measured blindly?)			X
Follow-up long enough?		X	
Follow-up complete?	X		

The Evidence:

		Successful return to fertility at 36 months			
		Fertility present		Fertility absent	
		Number	Proportion	Number	Proportion
Exposure to either DMPA or IUD	DMPA	747	0.94	49	0.06
	IUD	117	0.94	8	0.06

Relative Risk (RR)	1.00
95% CI	1.00 to 1.01
Number needed to Harm(NNH)	409

Oral contraceptive use is associated with a reduced risk of contracting ovarian cancer



استعمال أقراص منع الحمل يؤدي الى تقليل احتمالات الإصابة بسرطان المبيض

Oral contraceptive use for 4 to 8 years can reduce substantially the risk of ovarian cancer by age of 70 years in women with a family history of the disease. A reduction was noticed from approximately 4 cases of ovarian cancer per 100 nonusers to only 2 cases per 100 women who use OCs. There was also a similar trend in women with a negative family history.

إن استعمال أقراص منع الحمل لمدة ٤-٨ سنوات يؤدي الى تقليل احتمالات الإصابة بسرطان المبيض في السيدات سواء اللاتي لديهن أو ليس لديهن تاريخ عائلي للإصابة بهذا المرض

#### Background Knowledge:

**M**ost of what is known about ovarian cancer in adults is based on studies of epithelial tumors which accounts for approximately 90% of ovarian cancers, the remainder arising in germ cells and sex-cord stroma or from metastases to the ovary. Numerous factors have been suggested to increase women's risk of epithelial ovarian cancer, but apart from age and race, the only 2 factors of major importance are nulliparity, which includes infertility, and family history of ovarian cancer. The familial aggregation is attributable in part to the presence of BRCA1 gene located on chromosome 17q21. The increased risk from nulliparity has been explained in terms of 2 possible mechanisms: increased pituitary gonadotropin stimulation and incessant ovulation. There is a substantial evidence that oral contraception plays an important role in the reduction of ovarian-cancer risk in women generally and that increased duration of oral contraceptive use is correlated with a diminished likelihood of developing the disease.

#### Citations/s:

Walker GR, Schlesselman JJ, Ness RB. Family history of cancer, oral contraceptive use, and ovarian cancer risk. *Am J Obstet Gynecol.* 2002 Jan; 186(1):8-14

#### Three-part Clinical question:

Do women using oral contraceptives have a reduced risk of getting ovarian cancer?

#### Search Terms:

Ovarian cancer AND oral contraception

#### The study:

Case-control Study

#### The study patients:

Cases: Women 20-69 years of age who were diagnosed with epithelial ovarian cancer from May 1994 to July 1998, from 39 hospitals in Eastern Pennsylvania, Southern New Jersey, and Delaware.

#### Control:

Subjects who were aged 65 years were women at risk of ovarian cancer but free of the disease.

Standardized interviews were conducted in the homes of participating women as regards all the possible risk factors, cancer history and the total duration of OC use in months was calculated from her life-event calendar. From 2418 initially identified cases, 873 cases were potentially eligible for study.





Exposure of Interest:  
Oral contraceptives

The Outcome:  
Ovarian cancer

Comments:  
It is a population-based study with ascertainment of newly diagnosed cases and matched control subjects with structured interviews, so selection bias is limited. This study estimated that the risk of ovarian cancer decreased with increasing duration of OC use. Risk reduction that resulted from Long-term OC use (>48 months) was greater for women with a positive family history of ovarian cancer. Number needed to benefit was 2; i.e. from every two OCs users, one could get benefit (protected from ovarian cancer). The small size of women with a positive family history of ovarian cancer affects the precision of estimates, which resulted in wide confidence limits. Another limitation is that the study's findings can't be generally applied to all women.

Study features:

Multiple independent reviews of reports	Yes
Tested for heterogeneity	Yes
Exposure and outcomes were objective	Yes
Follow up was long enough and complete	Yes

The Evidence:

	Exposure		Outcome		ARR	RRR	OR	95% CI	NNT
			Cancer	No cancer					
Positive family history	Short-term ( $\leq 48$ months) use Vs Non	Yes	18	12	0.2	25%	0.37	0.09-1.47	6
		No	12	3					
	Long-term (>48 months) use Vs Non	Yes	3	9	0.55	69%	0.08	0.01-0.52	2
		No	12	3					
Negative family history	Short-term ( $\leq 48$ months) use Vs Non	Yes	259	534	0.09	23%	0.65	0.53-0.81	10
		No	313	408					
	Long-term (>48 months) use Vs Non	Yes	120	337	0.17	40%	0.47	0.36-0.59	6
		No	313	408					

NNT: Number Needed to Treat  
(The number of patients who if they received experimental treatment, would lead to one patient being cured or get benefit)



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