A Clinical Study of Transdermal Contraceptive Patch in Thai Women

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Objective: *To study cycle control, compliance and safety of a transdermal contraceptive patch in Thai women.*
Material and Method: *Sixty-nine healthy women were assigned to receive 3 cycles of contraceptive patch (ethinyl estradiol 20 μg and norelgestromin 150 μg /day). All participants aged 18-45 years were invited to participate at the family planning clinic at King Chulalongkorn Memorial Hospital. Adverse effects, perceived advantages, and disadvantages were collected.*
Results: *The participants averaged 22.4 years old, height 158.9 cm, weight 52.5 kg, BMI 20.7. The most common location of patch application was abdomen and the most adverse event was application site reaction (29%) followed by breast tenderness, nausea vomiting, and headache. The breast symptom was mild in severity. The participants reported decrease in dysmenorrhea and shorter duration of bleeding. Only 1.1% had breakthrough bleeding. There were no significant changes in body weight and blood pressure. Improvement of their facial acne was reported. There were no pregnancies during the use and the adhesion of contraceptive patch was excellent, partial patch detachment was reported at only14.4%. No complete patch detachment was found.*
Conclusion: *The study found an overall positive impression of new transdermal contraceptive patch. Good compliance and few side effects were demonstrated. The adhesive of the contraceptive patch was excellent.*

Keywords: *Transdermal contraceptive patch, Satisfaction, Adverse effects*

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In recognition of the difficulties associated with consistent and successful oral contraceptive(OC) use, the emphasis has moved toward the development of new technologies that afford users comparable contraceptive efficacy and safety, but do not require daily compliance with a pill-taking regimen. One such technology is the transdermal contraceptive system[1,2]. The contraceptive patch delivers norelgestromin and ethinyl estradiol (EE) to the systemic circulation[3]. Norelgestromin is the primary active metabolite of norgestimate, which is used in several combinations of oral contraceptives[3].

The contraceptive patch is applied weekly on the same day for three consecutive weeks (21 days) followed by one patch-free week per cycle. Application sites include lower abdomen, upper outer arm, buttock, or upper torso (excluding the breast)[1-3]. Women using this method may maintain their usual activities, including exercise, bathing, swimming, and use of a whirlpool or sauna[3,4-7].

Studies in adult women showed that the transdermal contraceptive patch provided effective contraception and cycle control and is well tolerated[4-6,8-10]. The incidence of side effects was similar to the incidence in oral contraceptive pills except for the application site reactions, higher incidence of breast discomfort, and breakthrough bleeding, or spotting during the first two cycle of use. Compliance with the patch in adult women was better than with the oral pill[6,8]. The objectives of this study were to evaluate side effects, cycle control, patch adhesion, and safety in Thai women.

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Material and Method

The participants were recruited from family planning clinic at King Chulalongkorn Memorial Hospital. The protocol was approved by ethic committee. After giving their written informed consent, the participants had to meet the following inclusion criteria: healthy women aged 18-45, who were sexually active and at risk of pregnancy, had regular menstrual cycles and at least one normal menstrual cycle, body weight less than 90 kg, and no use of any other steroid hormonal therapy at least 3 months before beginning the study. Exclusion criteria included pregnancy and lactation, any acute or chronic liver disease, history of significant cardiovascular, hepatic, renal or thromboembolic disease, hypertension > 140/90 mmHg, metabolic disturbance or any malignant tumor, history or presence of dermal hypersensitivity, undiagnosed abnormal uterine bleeding, active cigarette smoking, and alcohol or drug abuse.

Before the start of the contraceptive patch, each woman underwent a thorough general medical and gynecological examination including a cytological smear. The participant assigned to receive 3 cycles of contraceptive patch and follow-up every cycle or every month. Participants had diary card on which to record bleeding per vagina, application site reaction, adverse events, body weight, and blood pressure. Participants were asked about their menstrual pattern, any side effect, any concerns with this contraceptive patch. They were also asked specific questions related to patch application such as experience of detachment, peeling, and adherence to patch application schedule. For descriptive data, the results are expressed as the mean $\pm$ standard deviation.

Patch description and use

The Ortho Evra™ patch is designed to deliver 20 μg of ethinyl estradiol (EE) and 150μg of Norelgestromin daily. Participants were instructed to apply the patch to the buttock, upper outer arm, lower abdomen, back, and upper torso (exclusion breast). New patch could be applied near, but not on old sites. Participants were instructed to maintain their usual activities during patch use, including bathing and swimming. Participants were to apply the patch on the same day of each week (one patch per week) for three consecutive week followed by a patch-free week. Each course was repeated monthly for the duration of the 3-month study period. In the event of patch detachment, a new patch was to be applied immediately and worn for the remainder of the week.

Results

Seventy-one participants were enrolled in this study and two of them were excluded due to exclusion criteria. Sixty-nine participants who received the contraceptive patch had average age 22.4 years. The mean height was 158.9 cm and mean weight was 52.5 kg. The mean body mass index was 20.7. The mean of menstrual interval was 28.6 days and mean of menstrual duration was 4.6 days. 44.9% of subjects had menstrual cramps every cycle or every other cycle. 4.3% of participants were the first hormonal contraceptive users (Table 1).

No pregnancy was reported during the use of Ortho Evra (3 cycles). The majority reported that they remembered to apply the patch on time. The preferred application site was the lower abdomen (51.3%), followed by the buttock (31.2%), upper outer arm (11.0%) and back (6.3%). About 14.4% experienced at least one episode of partial patch detachment. There was no report of complete patch detachment.

Most of the participants reported regular menstrual periods while using Ortho Evra. Only 2.1% experienced occasional breakthrough bleeding. A decrease in dysmenorrhea symptoms was reported by 4.3% of participants. There was no significant change in body weight and blood pressure during use. About 34% had perceived weight loss and 25% had perceived weight gain while using the contraceptive patch. 30.4% of participants reported improvement of their facial acne.

About one third of participants (29%) reported mild application site reactions, followed by breast tenderness or discomfort (22.6%).

Heavy bleeding was reported by two participants, and one of two was dropped out from the study due to heavy bleeding in first cycle use. Other adverse events from were shown in Table 2. About 76% of participants were very satisfied with patch due to being more convenient than their previous contraceptive methods. 63% of participants desired to continue this method.

Table 1. Characteristics of the subjects

Variables	Patch users (n = 69)
Age (year)	22.4$\pm$3.0
Height (cm)	158.9$\pm$5.8
Weight (kg)	52.5$\pm$9.6
BMI (kg/m^2)	20.7$\pm$3.5
Menstrual interval (days)	28.6$\pm$2.3
Menstrual duration (days)	4.6$\pm$1.2

Table 2. Adverse events of patch users

Adverse events	Patch user (Number)	%
Bleeding	2	2.2
Spotting	1	1.1
Headache	10	10.8
Nuasea/vomitting	15	16.1
Dysmenorrhea	2	2.2
Abdominal clamp	0	0
Breast tenderness	21	22.6
Site reaction	27	29
Others	15	16.1

Discussion

This study was to evaluate the side effects, cycle control, patch adhesion and safety in Thai women using transdermal contraceptive patch (Ortho Evra™) over 3 cycles. In this study, the participants reported that they remembered to apply the patches on time, and no pregnancy was reported during use of patch. These findings indicate a good compliance and demonstrate its efficacy in this group. From this study, Ortho Evra‰ demonstrated excellent cycle control with all participants reporting regular menstrual periods. Furthermore, the use of contraceptive patch leads to regular periods starting from the first cycle. The incidence of breakthrough bleeding or spotting in this study was low. Only one participant in the study had heavy bleeding and discontinued the method. These findings were similar to previous studies[1-11].

Considering the side effects, the most common adverse event was application site reactions but did not disturb the acceptors and none discontinued for this reason. The other adverse event was breast symptoms and included breast discomfort, breast tenderness, breast engorgement and breast pain, and was similar to previous study[2-9].

Relief of dysmenorrhea symptoms is one of the benefits of contraceptive patch. Headache and nausea/vomiting reported only mild symptom and did not disturb daily activities. The other benefit was improvement of facial acne[12]. Weight gain is of particular concern to women deciding to use a hormonal contraceptive and is a significant predictor of early discontinuation. In this study, the contraceptive patch did not have an effect on body weight and there was no significant change in blood pressure.

The rate of patch detachment was 14.4% and only partial patch detachment was reported. The participants can try to reapply it to the same place. The adhesive reliability of the contraceptive patch is excellent[7] to ensure the participants ability to perform various daily activities or exercise. The transdermal contraceptive patch is easy to use[8,10] and the adverse events were not different from other hormonal contraceptives from previous studies[6,8-10]. In conclusion, from the study it was found that the contraceptive patch was well tolerated, with low potential for irritation and side effects. Most participants are satisfied with this contraceptive method.

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ความพึงพอใจ และอาการข้างเคียงที่พบ ของการใช้ยาคุมกำเนิดชนิดแผ่นแปะ ผิวหนังในหญิงวัยเจริญพันธุ์

โอทนี สุวรรณมาลี, สุรศักดิ์ ฐานีพานิชสกุล

วัตถุประสงค์: *เพื่อศึกษาความต่อเนื่องของการใช้ยา ความปลอดภัย และอาการข้างเคียง ของการใช้ยาคุมกำเนิดชนิดแผ่นแปะผิวหนังในสตรีไทย*

วัสดุและวิธีการ: *ศึกษาผู้มารับบริการที่หน่วยวางแผนครอบครัว โรงพยาบาลจุฬาลงกรณ์ จำนวน 69 คน อายุระหว่าง 18-45 ปี ได้รับยาคุมกำเนิดชนิดแผ่นแปะผิวหนัง (ประกอบด้วย ethinyl estradiol 20 μg และ norelgestromine 150 μg ต่อวัน) ติดต่อกัน 3 รอบระดู ติดตามการใช้ยาทุกรอบของการใช้ และบันทึกอาการข้างเคียง ข้อดี และข้อเสีย*

ผลการศึกษา: *ผู้เข้ารับบริการ อายุเฉลี่ย 22.4ปี สูงเฉลี่ย158.9 เซนติเมตร น้ำหนักเฉลี่ย 52.5 กิโลกรัม ดัชนีมวลกายเฉลี่ย 20.7 ตำแหน่งที่ใช้แปะแผ่นยามากที่สุด คือ หน้าท้อง อาการข้างเคียงที่พบมากที่สุด คือ ระคายเคืองผิวหนังบริเวณที่แปะยา (29%) ตามด้วย เจ็บคัดตึงเต้านม คลื่นไส้อาเจียน และปวดศีรษะตามลำดับ อาการเจ็บคัดตึงเต้านม พบว่ามีความรุนแรงในระดับน้อย และพบว่าหลังใช้ยา สามารถลดอาการปวดประจำเดือน และมีระยะเวลาของการเป็นประจำเดือนสั้นลง เลือดออกผิดปกติทางช่องคลอดพบเพียง 1.1% การเปลี่ยนแปลงของน้ำหนักตัว และความดันโลหิตหลังการใช้ยา ไม่พบว่ามีนัยสำคัญทางสถิติ และพบว่าการใช้ยาคุมกำเนิดชนิดแผ่นแปะผิวหนังช่วยลดการเป็นสิวบริเวณใบหน้า ไม่พบมีรายงานการตั้งครรภ์ระหว่างทำการศึกษา การติดของแผ่นยา ติดได้ดี มีการหลุดลอกของแผ่นยาบางส่วนเพียง 14.4% ไม่พบว่ามีการหลุดลอกทั้งหมดของแผ่นยาขณะใช้*

สรุป: *จากการศึกษา พบว่าผู้เข้ารับบริการมีความพึงพอใจต่อยาคุมกำเนิดชนิดแผ่นแปะผิวหนังเพราะใช้ง่าย พบการลอกหลุดของแผ่นยาต่ำและพบผลข้างเคียงน้อย*