Nasal carriage and antimicrobial susceptibility to *Staphylococcus aureus* among medical students at the HRH Princess Maha Chakri Sirindhorn Medical Center, Thailand: A follow-up study

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**Objective**: To evaluate the patterns of nasal colonization of *Staphylococcus aureus* and its susceptibility patterns among medical students before and after their rotations in the hospital.

**Materials and methods**: Nasal swabs were obtained from 128 medical students for microbiological study and susceptibility testing prior to working in the hospital (the first), following the first rotation schedule (the second) and at the end of the rotation schedule in the hospital (the last). The probable risk factors of nasal carriage were recorded for assessment.

**Results**: *S. aureus* was isolated at the first, second and last swabs with colonization rates of 29.7%, 30.5% and 39.4% respectively. The prevalence rate of colonization of *S. aureus* showed a statistically significant increase (*p* < 0.05). There was a persistent colonization of *S. aureus* at the rate of 20.3%. No participants have shown Methicillin-resistant *S. aureus*. The susceptibility of *S. aureus* to erythromycin and clindamycin was 36.8%, 41% and 34% at the first, second and last swabs respectively. There was no significant correlation between nasal carriage with *S. aureus* and its potential risk factors.

**Conclusion**: After a clinical rotation in the hospital, the prevalence rate of asymptomatic nasal carriage of *S. aureus* increases and such *S. aureus* isolate showns a relatively high resistance to erythromycin and clindamycin.

**Keywords**: *Staphylococcus aureus*, medical students, nasal carriage, antimicrobial susceptibility
Prevalence of obstructive sleep apnea in pregnancy

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Background: Many physiological changes in the respiratory system occur during pregnancy, with a 20% reduction in functional residual capacity (FRC) arising from elevation of the diaphragm to accommodate the enlarging uterus. This reduction is important during sleep because there is a fall in FRC associated with sleep itself and increases airway closure may result in increasing ventilation/perfusion mismatch. Pharyngeal dimensions and nasal patency are reduced from nasal congestion and rhinitis during pregnancy. These changes may affect the prevalence of obstructive sleep apnea in pregnancy.

Objective: To determine the prevalence of obstructive sleep apnea in Thai pregnant women.

Materials and methods: One hundred and twelve pregnant women were enrolled from January 2010 through December 2010 at antenatal clinic, HRH princess Maha Chakri Sirindhorn Medical Center, Nakorn-nayok province. All subjects answered the Berlin questionnaire, which provides information on age, weight, height, gravida, gestational age, snoring, and sleep apnea. The subjects that answered snoring or sleep apnea were tested by polysomnogram to detecting obstructive sleep apnea.

Results: No obstructive sleep apnea was detected from polysomnogram testing. The prevalence of sleep apnea was 5.95% and the prevalence of snoring was 31.25% from the Berlin questionnaire.

Conclusion: The prevalence of obstructive sleep apnea in pregnancy was not detected. The percentage of sleep apnea from the Berlin questionnaire was 5.95%.

Keywords: prevalence of obstructive sleep apnea, prevalence of sleep apnea, snoring, pregnancy
Latch score and exclusive breastfeeding during the first six-month postpartum


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Background: Latching is an important process to begin breastfeeding. The assessment of latching that is routinely used in Thailand is a latch score. The relationship between the latch score and exclusive breastfeeding is investigated.

Objective: To determine the latch score and exclusive breastfeeding relationship during first six months postpartum

Materials and methods: The subjects were 3065 uncomplicated postpartum women who had delivered at HRH Princess Maha Chakri Sirindhorn medical center in Nakhon-Nayok province since 2010 to 2012. At the second day of postpartum, data of latch score and exclusive breastfeeding were collected. Telephone follow-up on the postpartum day 2nd, 7th, 14th, 45th and at the second, fourth, and sixth month were used for exclusive breastfeeding data collection after maternal discharge.

Results: On the postpartum day 2nd, 7th, 14th, 45th and at the second, fourth, and sixth month, the exclusive breastfeeding rates were 81.4, 79.8, 73.3, 56.8, 53.3, 36.7, and 31.3 %, respectively. The mean of latch score in exclusive breastfeeding group was significantly higher than that of the non-exclusive breastfeeding group at second and seventh postpartum day. A latch score of 9 and above was used to test exclusive breastfeeding at the second day postpartum. The positive predictive value was 98.5% (area under the curve = 0.72). The relative risk at this latch score was 22 (95% confidence interval between 10.9 and 44.4).

Conclusion: Latch score related to exclusive breastfeeding at the second postpartum day. The latch score could be used to predict exclusive breastfeeding in early postpartum period.

Keywords: latching, latch score, exclusive breastfeeding
Exclusive 6-month breastfeeding by hospital personnel


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Background: Breast milk is the ideal nourishment for infants during the first six months of life. In Thailand, a government breastfeeding campaign was instituted in the national social and economic development plan in 1977. In 2004, the Ministry of Public Health declared a six month exclusive breastfeeding policy and set an objective percentage of 30% six month exclusive breastfeeding in 2006 for the Thai population. This optimistic 30% figure has not been attained.

Objective: To determine the rate of exclusive 6-month breastfeeding by hospital personnel and factors affecting this rate.

Materials and methods: The data was collected by telephone interview six months post-delivery by hospital personnel who delivered at HRH Princess Maha Chakri Sririndhorn medical center in Ongkharak distinct and Nakhonnayok province between 2009 and 2010. The rate of exclusive 6-month breastfeeding by hospital personnel and factors affecting this rate were collected and analyzed.

Results: The number of hospital personnel who delivered at HRH Princess Maha Chakri Sririndhorn medical center between 2009 and 2010 was 62. The percentage of exclusive 6-month breastfeeding by all hospital personnel was 33.9%. The percentage of exclusive 6-month breastfeeding by medical service personnel was 34.2%. The percentage of exclusive 6-month breastfeeding by nurses was 44.0%. The percentage of exclusive 6-month breastfeeding by nurses aids was 15.4%. The percentage of exclusive 6-month breastfeeding by office personnel was 33.3%. Factors affecting breastfeeding were the mother’s return to work (51.6%), insufficiency or lack of breast milk (12.9%), short or inverted nipples (24.2%), maternal illness (8.1%) and infant illness (3.2%).

Conclusion: The rate of exclusive 6-month breastfeeding by hospital personnel was 33.9%. The most significant factor affecting duration of breastfeeding was the mother's return to work.

Keywords: exclusive 6-month breastfeeding, exclusive breastfeeding, factors affecting exclusive breastfeeding, hospital personnel
บทนำ: โรคกรดไหลย้อนมาที่กล่องเสียงโรคกรดไหลย้อนมาที่กล่องเสียงและคอหอย ปัจจุบันจำนวนผู้ป่วยที่ได้รับวินิจฉัยมีแนวโน้มมากขึ้น การวินิจฉัยทำได้หลายวิธีทั้งอาการ และอาการแสดงทางกล่องเสียง การวัดจำนวนเหตุการณ์ที่ค่าความเป็นกรดในหลอดอาหารและบริเวณเหนือหูรูดหลอดอาหารส่วนบนมีค่าต่ำกว่าค่าอ้างอิง ซึ่งค่าอ้างอิงวิธีหลังนี้ส่วนใหญ่เป็นค่าที่ได้จากประเทศแถบทวีตถ้ำและอเมริกา ยังไม่เคยมีการศึกษาค่าความเป็นกรดด่างบริเวณคอหอยในกลุ่มประชากรคนไทยที่ไม่มีอาการและอาการแสดงโรคกรดไหลย้อนมาก่อน

วัตถุประสงค์: การศึกษานี้จึงเป็นครั้งแรกที่ศึกษาในคนไทย ผลการศึกษาที่ได้จะเป็นประโยชน์ทางคลินิกเพื่อใช้ในการวินิจฉัยโรคกรดไหลย้อนที่กล่องเสียง และเป็นการข้อมูลพื้นฐานสำหรับการศึกษาอื่น ๆ ต่อไป

วิธีการศึกษา: การศึกษาแบบ cohort study ในอาสาสมัครคนไทยสุขภาพดี อาสาสมัครทุกคนให้ตอบแบบสอบถามอาการทางกล่องเสียงและคอหอยที่เกิดจากกรดไหลย้อน (Reflux Symptom Index, RSI) มีคะแนนไม่เกิน 13 และตรวจดูอาการแสดงภาวะกรดไหลย้อนมาที่กล่องเสียงและคอหอยด้วยเครื่องบันทึกภาพ (Reflux Finding Score, RFS) ไม่เกิน 7 ใช้เครื่องมือที่ใช้วัดค่าความเป็นกรดด่างบริเวณคอหอย (Restech®Pharyngeal pH Sensor Technology, San Diego, California) มีจุดวัดตำแหน่งเดียวโดยตำแหน่งจุดวัดอยู่ที่บริเวณคอหอยระดับลิ้นไก่

ผลการศึกษา: ค่ากรดด่างจากประชากรทั้งหมด 29 คน มีค่าเฉลี่ย 6.6979 ค่ามากที่สุด 8.3439 และน้อยที่สุด 6.0655 พบว่าในท่านั่งจำนวนเหตุการณ์ที่ค่าความเป็นกรดน้อยกว่า 5.5 มีจุดวัด (median) มีค่า 0.13 เบอร์เชนใกล้ที่ 95 มีค่า 12.5 ร้อยละของเวลาที่ค่าความเป็นกรดน้อยกว่า 5.5 มีจุดวัด (median) คิดเป็น 0 เบอร์เชนใกล้ที่ 95 มีค่า 9.07 และในท่านั่งจำนวนเหตุการณ์ที่ค่าความเป็นกรดน้อยกว่า 5 มีจุดวัด (median) มีค่า 0 เบอร์เชนใกล้ที่ 95 มีค่า 2 ร้อยละของเวลาที่ค่าความเป็นกรดน้อยกว่า 5 มีจุดวัด (median) คิดเป็น 0 เบอร์เชนใกล้ที่ 95 มีค่า 9.07

บทสรุป: ผลการศึกษาค่าความเป็นกรดด่างมีค่าไม่แตกต่าง เมื่อเทียบกับการศึกษาที่ในประเทศแถบทวีตถ้ำและอเมริกา แต่จะมีวิธีการประกอบอาหารการรับประทานแตกต่างกัน

คำสำคัญ: laryngopharyngeal reflux, gastroesophageal reflux, 24 hour pH monitoring, Thai
บทนำ: ปัจจุบันโรคกรดไหลย้อนที่แสดงอาการบริเวณกล่องเสียงและคอหอยเป็นปัญหาสำคัญอันดับต้นๆในผู้ป่วยมารับการตรวจรักษาที่ภาควิชาจักษุ ศอ นาสิก ลาริงซ์วิทยา คณะแพทยศาสตร์ มหาวิทยาลัยศรีนครินทรวิโรฒ ทำให้เกิดการไอเรื้อรัง ผู้ป่วยเสียงแหบ กลืนอาหารลำบาก มีอาการจุกติดแน่นที่คอ ปวดคอ หายใจลำบาก สำหรับการตรวจวินิจฉัยมีตั้งแต่การประเมินจากอาการ การส่องกล้องหรือการใส่อุปกรณ์ตรวจวัดความเป็นกรด-ด่าง 24 ชั่วโมง

วัตถุประสงค์: เพื่อศึกษาประสิทธิภาพของดัชนีอาการกรดไหลย้อนเปรียบเทียบกับเครื่องวัดความเป็นกรด-ด่าง บริเวณคอ (oropharyngeal pH probe) ในการวินิจฉัยโรคกรดไหลย้อนที่แสดงอาการบริเวณกล่องเสียงและคอหอย

วิธีการศึกษา: ศึกษาแบบ prospective cohort study โดยเก็บข้อมูลในผู้ป่วยที่มีอาการของโรคกรดไหลย้อนที่แสดงอาการบริเวณคอหอยและกล่องเสียงในแผนกผู้ป่วยนอกจักษุ ศอ นาสิก ลาริงซ์วิทยาโรงพยาบาลศาสตร์พระยาทหารราชศูนย์ฯ สำนักงานราชกิจ จักร ณรงค์บุรี จำนวน 64 คน ตั้งแต่เดือนกรกฎาคม 2555 ถึงเดือนมิถุนายน 2556 รวมเวลาทั้งสิ้น 1 ปี

ผลการศึกษา: จากการเก็บข้อมูลผู้ป่วยทั้งหมด 64 คน มีผู้ที่มีดัชนีอาการกรดไหลย้อนมากกว่าหรือเท่ากับ 13 มีจำนวนทั้งสิ้น 26 คน เป็นชาย 8 คน (ร้อยละ 30.77) และหญิง 18 คน (ร้อยละ 69.23) ส่วนผู้ที่มีดัชนีอาการกรดไหลย้อนน้อยกว่า 13 จำนวนทั้งสิ้น 38 คน เป็นชาย 18 คน (ร้อยละ 47.37) และหญิง 20 คน (ร้อยละ 52.63) ช่วงอายุที่พบมากที่สุดคือ อายุ 51-60 ปี (ร้อยละ 34.37) สำหรับอาการที่พบในผู้ป่วย ที่พบมากที่สุดคือ เจ็บคอ ปวดคอ แสบคอ แสบหน้าอก 25 คน (ร้อยละ 96.15) ที่พบมากที่สุดคือ อาการมีอาการจุกติดแน่นที่คอหอย (LPR) ที่พบมากที่สุดคือ เจ็บคอ ปวดคอ แสบคอ แสบหน้าอก 25 คน (ร้อยละ 96.15) และอาการมีอาการจุกติดแน่นที่คอหอย 25 คน (ร้อยละ 96.15) ค่าดัชนีอาการกรดไหลย้อน (Reflux symptom index, RSI) ตั้งแต่ 14 ถึง 40 (เฉลี่ย RSI = 30) หลังจากวิเคราะห์ข้อมูลประสิทธิภาพของดัชนีอาการกรดไหลย้อนเปรียบเทียบกับเครื่องวัดความเป็นกรด-ด่าง พบว่ามีค่า sensitivity เท่ากับ 70.58% ส่วนค่า specificity เท่ากับ 93.33% ซึ่งสื่อว่ามีความแม่นยำในการช่วยวินิจฉัยโรคกรดไหลย้อนที่แสดงอาการบริเวณกล่องเสียงและคอหอยอยู่ในระดับ 70.58% ดังนั้นการใช้ดัชนีอาการกรดไหลย้อนเปรียบเทียบกับเครื่องวัดความเป็นกรด-ด่างเป็นเครื่องมือที่มีประโยชน์ในการวินิจฉัยโรคกรดไหลย้อนได้
ปานกลาง การที่จะนำไปใช้ในการคัดกรองผู้ป่วยเบื้องต้นอาจจะได้ผลไม่ค่อยดีนัก แต่เหมาะสมในการนำไปใช้คัดกรองผู้ป่วยที่มีความเสี่ยงต่อการเป็นโรคได้ ทั้งนี้สามารถที่จะนำมาใช้การคัดกรองไหลย้อนไปใช้ร่วมกับแบบสอบถามหรือการทดสอบอื่นๆ เช่น คะแนนการตรวจพบการคัดกรองไหลย้อน (Reflux Finding Score) ซึ่งจะช่วยเพิ่มประสิทธิภาพในการวินิจฉัยโรคได้สูงขึ้น สำหรับค่า positive predictive value เท่ากับ 92.30% ถือว่ามีความจำเพาะต่อการวินิจฉัยโรคสูง ส่วนค่า negative predictive value เท่ากับ 73.68% ถือว่ามีความไวต่อการวินิจฉัยโรคปานกลาง

บทสรุป: แบบสอบถามดัชนีอาการกรดไหลย้อน (RSI) มีความแม่นยำในการช่วยวินิจฉัยโรคกรดไหลย้อนที่แสดงอาการบริเวณกล้องเสียงและคอหอยอยู่ในระดับปานกลาง จึงสามารถที่จะนำไปใช้ในการคัดกรองผู้ป่วยเบื้องต้นได้ และช่วยประหยัดค่าใช้จ่ายในการติดเครื่องวัดความเป็นกรด-ด่าง 24 ชั่วโมง

คำสำคัญ: laryngopharyngeal reflux (LPR), oropharyngeal 24-hr pH probe, reflux symptom index (RSI), reflux finding score (RFS)
Background: Obstructive sleep apnoea (OSA) causes several diseases, especially in the cardiovascular and endocrine systems. No screening tool for OSA has been however been validated in patients.

Objective: This study was intended to develop and validate a concise and easy-to-use questionnaire for OSA screening in patients.

Methods: Patients aged 18 to 70 years and without previously diagnosed OSA were recruited. After a factor analysis, reliability check, and validity check; four yes/no questions were used to develop this screening tool. The four questions were respectively related to snoring, sleepy, stop breathing, and high systolic blood pressure (4S). For validation, the score from the 4S questionnaire was evaluated versus the apnoea-hypopnoea index from monitored polysomnography over 1 night.

Results: The 4S questionnaire was given to 85 patients. Mean age, body mass index were 50.43 years and 28.25 kg/m², respectively. All patients underwent polysomnography. The sensitivity, specificity, positive predictive value, and negative predictive value of the 4S questionnaire with apnoea-hypopnoea index greater than 5, which diagnose obstructive sleep apnoea were 90.6%, 14.3%, 73.42%, and 50.0%, respectively.

Conclusions: The 4S questionnaire is an acceptable and easy-to-use screening tool for OSA. It has been developed and validated in patients at otorhinolaryngology clinics.

Keywords: Obstructive sleep apnoea, snoring, sleepy, Stop breathing, systolic blood pressure
Prevalence of laryngopharyngeal reflux in obstructive sleep apnea

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**Background:** Obstructive sleep apnea (OSA) and laryngoesophageal reflux disease (LPR) are common chronic diseases and share several similar risk factors. The prevalence of LPR in patients with OSA is significantly higher than in the general population. Studies were conducted to determine the prevalence of LPR in OSA patients, as no such data have been reported in Thailand.

**Objective:** The objective of this study was to determine the prevalence of LPR and their related factors in Thai OSA patients.

**Materials & methods:** Patients aged 18 to 70 years without previously diagnosed OSA and LPR were recruited. After monitoring with a full night polysomnography, patients who were diagnosed with OSA completed the reflux symptom index (RSI) questionnaire and underwent physical examination by two otolaryngologists for reflux finding score (RFS).

**Results:** Sixty-four patients who were diagnosed OSA had mean age, body-mass index, systolic blood pressure and diastolic blood pressure of 51.55 ± 12.85 years, 29.3 ± 5.4 kg/m², 131.7 ± 14.9 and 80.2 ± 11.3 mmHg, respectively. No significant differences were found between the groups (with LPR and without LPR). Patients with fatigue in the afternoon were 100% in the LPR group and 78% in the other group. Prevalence of LPR in Thai OSA patients was 21.9%.

**Conclusion:** This study demonstrates that LPR is quite common in Thai OSA patients. Physician awareness of LPR is essential to guarantee early intervention and reduce the cost of the treatment.

**Keywords:** Sleep apnea, obstructive sleep apnea, laryngopharyngeal reflux, gastroesophageal reflux disease
การศึกษาเปรียบเทียบขนาดของ Omeprazole
ในการรักษาโรคกรดไหลย้อนที่กล่องเสียง

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การศึกษาเปรียบเทียบขนาดของ Omeprazole ในการรักษาโรคกรดไหลย้อนที่กล่องเสียง:

บทนำ:
โรคกรดไหลย้อนกล่องเสียงเป็นสาเหตุหนึ่งที่ทำให้ผู้ป่วยมาพบแพทย์ที่โรงพยาบาล เนื่องจากมีอาการเสียงแหบ จุกแน่น แสบในลำคอ กลืนลำบาก เป็นต้น ซึ่งการรักษาโรคกรดไหลย้อนที่กล่องเสียงนั้น ได้แก่ การปรับเปลี่ยนพฤติกรรมการทานอาหาร เช่น การหลีกเลี่ยงการทานอาหารก่อนนอน น้ำอัดลม และการหลีกเลี่ยงการนอนหลับร่วมกับการใช้ยา ซึ่งยาหลักที่ใช้ในการรักษาคือยา proton pump inhibitor ได้แก่ยา omeprazole ที่มีผลดีในการรักษา

วัตถุประสงค์:
การศึกษาจึงทำเพื่อศึกษาเปรียบเทียบขนาดยา omeprazole ระหว่าง 40 มิลลิกรัมต่อวันเทียบกับขนาด 80 มิลลิกรัมต่อวัน ว่าขนาดใดให้ผลในการรักษาดีกว่ากัน

วิธีการศึกษา:
ทำการศึกษาโดยการเก็บข้อมูลผู้ป่วย 40 คน ที่มีอาการเสียงแหบ จุกแน่น แสบในลำคอ กลืนลำบาก เป็นต้น ซึ่งการรักษาคือการใช้ยา omeprazole ขนาด 40 มิลลิกรัมต่อวัน ว่ามีผลดีในการรักษาดีกว่ากัน

ผลการศึกษา:
ผลการศึกษาพบว่าผู้ป่วยที่ได้รับยา omeprazole ขนาด 40 มิลลิกรัมนั้น ได้ผลดีในการรักษาโรคกรดไหลย้อนที่กล่องเสียงอย่างมีนัยสำคัญทางสถิติที่เดือนที่ 1 และ 2 โดยมีคะแนนดีขึ้น

*128*
รักษาของยาขนาด 40 มิลลิกรัมต่อวัน อยู่ที่ 270 บาท และ 540 บาท สำหรับยาขนาด 80 มิลลิกรัมต่อวัน

บทสรุป: จากการศึกษาพบว่าขนาดยาในการรักษากรดไหลย้อนที่กล่องเสียงขนาด 40 มิลลิกรัมต่อวันและ 80 มิลลิกรัมต่อวัน เป็นระยะเวลาสามเดือน ให้ผลในการรักษาโรคغرดไหลย้อนที่กล่องเสียงไม่แตกต่างกัน

คำสำคัญ: Laryngopharyngeal reflux, Omeprazole
See-and-treat approach to cervical intraepithelial lesions in HRH Princess Maha Chakri Sirindhorn Medical Center (MSMC)

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Objective: To evaluate the overtreatment rate of the see and treat (S&T) approach in the management of women having abnormal cervical cytology.

Methods: Retrospective study of patients with abnormal cervical cytology who underwent S&T at MSMC between January 2008 and December 2012 were reviewed. Loop electrosurgical excision procedure (LEEP), histological results, cytology, and colposcopic impression were analyzed to evaluate overtreatment rate, cyto-histological correlation, and relative factors.

Results: Average age of S&T cases was 42 years old. Ninety-seven percent were referred cases from affiliated health care providers. The study revealed that 83.2% patients had high-grade squamous intraepithelial lesions (HSIL) or higher from cervical cytology. Correlation between HSIL and final histology was relatively low at 75% compared to other studies. Overtreatment rate was 28%.

Conclusion: S&T was done in 197 patients in a tertiary care health facility with patient satisfaction. Overtreatment occurred, but at a rate that can be reduced with proper recommendation. HSIL Pap smears should be reexamined before S&T while premenopause, low grade, and lesser colposcopic impression groups should obtain conventional colposcopic approach for patients’ future reproduction benefit.

Keywords: high-grade squamous intraepithelial lesion, overtreatment, see and treat.
Prevalence and risk factors of mild cognitive impairment in menopausal women at HRH Princess Maha Chakri Sirindhorn Medical Center


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Objective: To assess the prevalence and risk factors associated with mild cognitive impairment (MCI) in Thai menopausal women.

Materials and methods: Eligible menopausal women were asked to participate in the Thai Montreal Cognitive Assessment (Thai MoCA) test at HRH Princess Maha Chakri Sirindhorn Medical Center during a face-to-face interview. Cognitive impairment was defined as a test’s score of 24 or less. Univariate and multivariate analyses were performed to determine the variables associated with a positive Thai MoCA test.

Results: The authors found that 20 of the 120 participants were cognitively impaired. The significant associated risk factors were low education (adjusted odd ratio: 3.7; \( p = 0.03 \)) and the number of concomitant medical diseases. The adjusted odd ratios for one, two and three diseases were 18.0, 42.1 and 88.9 respectively.

Conclusion: The prevalence of MCI in menopausal women was 16.7%. Early detection of this problem in vulnerable group will benefit their cognitive performance.

Keywords: prevalence, mild cognitive impairment, menopause, HRH Princess Maha Chakri Sirindhorn Medical Center
Background: Philadelphia chromosome (Ph)/BCR-ABL-positive acute lymphoblastic leukemia (ALL) gives an adverse prognosis. Before tyrosine kinase inhibitors (TKIs) era found poor outcome. Combination of chemotherapy with TKIs imatinib has increased survival ranges from 40% to 50%. Second generation TKIs; eg, dasatinib and nilotinib have benefit in acquired imatinib resistance.

Case Report: A 16 year old man presented with subacute fever and fatigue 4 weeks prior to hospital admission. On physical examination, he was found markedly anemic but without organomegaly. His white blood count was 300,000/µL, positive lymphoblasts were found 95% on a peripheral blood smear. Bone marrow examination, cytogenetic analysis, and flow cytometry were performed. Bone marrow smear showed markedly hypercellularity, diffuse infiltrated with lymphoblast about 90%. Erythroid cells, myeloid cells, and megakaryocytes were markedly decreased. A diagnosis of B-acute lymphoblastic leukemia was confirmed by flow cytometry. Chemotherapy ALL protocol and CNS prophylaxis (intrathecal Ara-C on day 1 and intrathecal methotrexate day 7) was administered at diagnosis. No febrile neutropenia occurred. On day 14 and day 28 of treatment, bone marrow examination was repeated. Bone marrow smear showed markedly hypercellularity, diffused infiltrated with lymphoblast about 90%. Cytogenetic analysis revealed a translocation between chromosome 9 and 22. RT-PCR for BCR/ABL p190 was positive. The treatment consisted of imatinib (600 mg/d) on day 1 to 15 combined with a hyperCVAD regimen Complete hematologic and cytogenetic response was found after 2 cycles. After 8 cycles of chemotherapy, he had still hematologic and cytogenetic response. Minimal residual disease was detected positive 0.03%. No match related donor could be found. After complete remission, 600 mg of imatinib was administered every day. About 3 months later, bone marrow examination was repeated and revealed a positive lymphoblast 19%. The dose of imatinib was then increased to 800 mg. Two weeks later, his white blood cell counts raised...
up to 60,000/µL, positive lymphoblast was found 70% of all WBC. He was admitted at hospital and started with intravenous dexamethasone while waiting for donate dasatinib donation. After 5 days of dexamethasones, 140 mg/d of dasatinib was started. One week later, WBC was decreased from 90,000/µL to 30,000/µL, was sustained for about 2 weeks to raise again up to 90,000/µL. BCR-ABL mutation was found positive F317L. Four hundred milligram of nilotinib was started due to more drug sensitivity and patient could be access. After start nilotinib, WBC was decreased to 20,000-30,000/µL and was sustained for 4 weeks and then raised up again. A Y253H mutation was found but F317L mutation was still positive. Unfortunately he died after diagnosis ALL relapsed 7 months from progressive disease.

Conclusion: Ph-positive ALL is the one of most unfavorable prognosis. The addition of imatinib to chemotherapy increases complete remission but no allogeneic HSCT did not significant survival benefit. So after imatinib induction therapy, allogeneic haematopoietic stem cell transplantation is required. Nilotinib could be used in imatinib resistance Ph-positive ALL, but only to decrease WBC counts and not to produce a complete hematologic response.

Keywords: Ph-positive ALL, imatinib resistant, nilotinib
Case Report: Enteropathy associated T-cell non-Hodgkin lymphoma

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Introduction: Enteropathy associated T-cell non-Hodgkin lymphoma (EATL) is uncommon, occurring in 5.4% of all non-Hodgkin lymphoma (NHL), presents an aggressive course, and unfavorable prognosis.

Case Report: A 60-year-old man presented with chronic epigastric pain, significant weight loss and night sweat 4 months prior to hospital admission. On physical examination, he had a mild pallor, no hepatosplenomegaly and no lymphadenopathy. A complete blood count revealed normal hematocrit, normal white cell count, and normal platelet count. Serum chemistry revealed an LDH of 250 U/L. Esophagogastroduodenoscopy revealed multiple large ulcers at the body and antrum. Pathological diagnosis of the tissue was confirmed by immunophenotyping, compatible with type II enteropathy associated T-cell non-Hodgkin lymphoma. While waiting for staging of the disease for about 4 days, he had a sudden epigastic pain and went to another hospital. On physical examination, he had a generalized peritonitis. Computerized tomography revealed pneumoperitoneum and multiple intraabdominal lymphadenopathy. Intraoperative finding revealed a gastric perforation at cardia sized 2 cm in diameter and a jejunal perforation. Exploratory laparotomy was performed to repair the stomach by simple sutures with an omental patch with biopsy and the small bowel resected with end to end anastomosis. One day after surgery, he had melena. On the next day, he had dyspnoea on endotracheal tube and moved to the ICU due to volume overload. Bone marrow biopsy showed small to medium size cells, interstitial and diffuse involvement by lymphoma cells, confirmed by immunophenotyping was EATL. Clinical stage was IVB. Two weeks later, the endotracheal tube was removed and surgical wound was healed. A complete blood count revealed hematocrit of 24%, low white cell count (1,500/µL with neutrophils 8.27%, lymphocytes 6.8%,
monocytes 5.4%, eosinophils 0.2%, basophils 0.4%), and low platelet count (68,000/µL). Serum chemistry revealed LDH 788 U/L. Chemotherapy with cyclophosphamide, doxorubicin, vincristine, and prednisolone (CHOP regimen) was started. He had febrile neutropenia and Pseudomonas septicemia after first course of chemotherapy. He was treated with 3 courses of CHOP regimen, CNS prophylaxis was given by intrathecal methotrexate. After treatment, cytopenia improved, LDN become normal, but unfortunately he died from an infected central line.

**Conclusion:** EATL has a very poor prognosis due to treatment resistance, sepsis, or perforation of the bowel at diagnosis or during treatment. New therapies are needed to treat in-patients with diagnosis of EATL.

**Keywords:** T cell non-Hodgkin lymphoma, GI lymphoma
Background: As peritoneal dialysis (PD) is a home-based dialysis, home visit is therefore a mandatory tool to monitor PD patients. Most of PD patients in Thailand do not receive home visits because PD nurses have too much workload to perform them.

Objective: To set up home visit program performed by community-based nurses at Nakhonnayok province.

Materials and methods: The home visit program performed by community-based nurses has been implemented step by step. First, it has been accepted as a policy by the director of Nakhonnayok Provincial Public Health Office. Second, a case record form (CRF) for home visit was designed. Third, the community-based nurses were trained to perform home visit and to fill the CRF. They performed home visits of PD patients according to the schedule set by the PD nurse and sent the CRF back for evaluation. The outcomes of this program were assessed by measuring the percentage of PD patients visited by community-based nurses, evaluating their knowledge, and comparing peritonitis rate occurred between the year 2011 and 2012.

Results: The total number of PD patients at Nakhonnayok province in the year 2012 was 41 cases. The community-based nurses performed home visit in 33 cases (80.7%). The CRFs of home visit were filled correctly in 100% of the cases. The peritonitis rate at the Nakhonnayok hospital in the year 2012 was less than that in the year 2011 (1 episode/31.6 patient-month vs 1 episode/27.6 patient-month, respectively).

Conclusion: The community-based nurses can perform home visits to PD patients if the program is well organized and monitored.

Keywords: home visit, peritoneal dialysis, peritonitis
Cryptococcal peritonitis in a peritoneal dialysis patient: case report

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Background: Cryptococcal peritonitis has rarely been described in peritoneal dialysis (PD) patients. We report a case of PD-related peritonitis from Cryptococcus neoformans.

Case presentation: A 67-year-old male patient had 5 years history of diabetes. He developed end-stage renal disease from unknown cause of rapidly progressive glomerulonephritis and has been performed continuous ambulatory peritoneal dialysis for 4 months by his daughter. He was admitted to hospital in the end of June, 2013 due to fever, nausea, vomiting, abdominal pain, and cloudy peritoneal dialysate for 3 days. He has not been prescribed immunosuppressive medications. Physical examination revealed that he had a temperature of 39°C with diffuse abdominal tenderness. The appearance of exit site and tunnel were normal. The investigation showed dialysate cell counts of 2.92x10³ cells/µL with 61% of neutrophils and 39% of monocytes. He was initially treated with cefazolin and cetazidime by intraperitoneal route. His clinical status did not improve. On the third day of admission, PD effluent culture was still turbid. The result of PD effluent culture was Cryptococcus neoformans but the blood culture showed no growth of organism. The Cryptococcal neoformans antigen in serum was positive with a titer of 1:16. A lumbar puncture for CSF examination was performed and revealed normal CSF without the organism or cryptococcal antigen. Intravenous amphotericin and oral route fluconazole were prescribed. The Tenchkoff catheter was removed immediately after knowing the PD effuent culture results.

Conclusion: We report a rare case of Cryptococcal peritonitis in a PD patient. The cause of Cryptococcal infection in this case will be investigated by performing home visit and retraining the exchange procedure. The Tenchkoff catheter will be reinserted after 8 weeks of antifungal medications.

Keywords: peritonitis, Cryptococcus, fungus
Survival analysis of peritoneal dialysis patients from PD centers in the National Health Security Office Region 4 (Saraburi), Thailand

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**The 4th Sector of National Health Security Office, Saraburi, Thailand

Background: Thailand has launched the first peritoneal dialysis (PD) policy since the year 2008. The National Health Security Office (NHSO) has been separated into 13 sectors to cover PD service in Thailand.

Objective: To calculate the patient survival and technique survival from PD centers in the NHSO sector 4. In addition the factors associated with patient survival and technique survivals were analyzed.

Materials and methods: The online program called DPEX was developed to register the database. The data of PD patients under 3 health coverage schemes (civil servant medical benefit scheme, social security scheme, and universal health coverage scheme) from 14 PD units in 8 provinces during November 2003 to December 2012 were analyzed. Patients who survived less than 90 days after the first date of PD prescription were excluded. Patient survival and technique survivals (death exclude) were evaluated.

Results: The 986 (80.1%) patients from 1,219 patients survived at least 90 days after PD initiation. The mean age was 55.6 ± 14.3 years. The percentage of male and female were 37.8% and 62.2%, respectively. The most common cause of end-stage renal disease was diabetes (62.2%). The crude death rate was 29.9%. The 1-, 2-, 3-, 4-, and 5-year patient survival rates were 83.9%(95%CI: 81.3-86.3%), 66.5%(95%CI:62.6-70.1%), 54%(95%CI:49.2-58.5%), 43.4%(95%CI:37.2-49.6%), and 36.5%(95%CI:27.7-45.4%), respectively. The higher age at the time of PD initiation was significantly associated with lower patient survival. The 1-, 2-, 3-, 4-, and 5-year technique survival rate were 93.3%(95%CI: 91.3-94.5%), 83.3%(95%CI: 79.8-86.2%), 73.3%(95%CI: 68.2-77.7%), 68.7%(95%CI: 68.2-74.3%), and 63.4%(95%CI: 50.9-73.6%), respectively. The peritonitis episode and higher age were significantly associated with lower technique survival. Gender and eGFR at the time of starting PD and diabetes were not associated with patient survival or technique survival.
Conclusion: The patient survival of PD patients in the NHSO sector 4 is acceptable. Age of patients is associated with patient survival while age and peritonitis episode are associated with technique survival.

Keywords: peritoneal dialysis, survival, NHSO
Case report: Colonic lymphoma presented as IBS like symptoms

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Background: Irritable bowel syndrome (IBS) is a common gastrointestinal problem in general practice. The common manifestations of IBS are diarrhea, constipation and abdominal pain or discomfort. Diagnosis of IBS base on Rome III criteria and exclude other organic diseases. Lymphoma is a hematologic malignancy and can involve many organs including gastrointestinal tract with stomach and small bowel predominate. Colonic lymphoma is an uncommon and usually present with chronic diarrhea, low grade fever, weight loss and night sweating, but IBS like symptoms is uncommon.

Case report: A 61-year-old woman presented with intermittent diarrhea after only spicy food ingestion for 1 yr, she had abdominal discomfort and resolved after stool passing. She had no underlying disease, no history of fever, weight loss and night sweating. Physical examination revealed normal abdominal and digital rectal examination, no anemia, lymphadenopathy or hepatosplenomegaly. Initial laboratory investigation was done and showed normal CBC, TSH, FT3, albumin and stool examination. Esophagogastroduodenoscopy and colonoscopy were performed and showed normal esophagus, stomach and duodenum, diffuse ulcerated nodules varying in size from 1-2.5 cm at rectum to sigmoid colon (Figure 1,2), normal terminal ileum. Biopsy specimens taken from ulcerated nodules were sent for routine histologic examination and immunohistochemical staining and showed findings compatible with non-Hodgkin’s lymphoma. The patient was sent to hematologist and bone marrow aspiration was done and showed lymphoma involved bone marrow. The patient received systemic chemotherapy (CHOP regimen) and clinical intermittent diarrhea after spicy food ingestion was resolved after fourth course of systemic chemotherapy.

Conclusion: Irritable bowel syndrome is a common functional cause of chronic diarrhea. Many organic diseases can present as IBS like symptoms including colonic lymphoma as in this patient. Before diagnose of IBS, organic diseases of diarrhea must be excluded especially in the elderly patient.
Keywords: colonic lymphoma, irritable bowel syndrome

Figure 1. Endoscopic findings: ulcerated nodules at transverse colon

Figure 2. Endoscopic findings: ulcerated nodules at ascending colon
Case report: Cystic liver metastases from squamous cell carcinoma

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Background: Cystic liver metastases are less common than solid liver metastases. The primary tumor of cystic liver metastases is usually colonic adenocarcinoma, melanoma, carcinoid, cystic sarcoma, breast or renal or ovarian cancer. Colonic cancer is the common, accounting for about 50% of all hepatic metastases. Cystic liver metastases from squamous cell carcinoma are uncommon.

Case report: A 55-year-old man presented with right upper quadrant pain with significant weight loss for 3 months. He had no underlying disease and no history of dysphagia, gastrointestinal bleeding, bowel habit change, abnormal pigmentation or abnormal urination. Physical examination revealed cachexia, mild pale, enlarge right lobe of liver 15 cm below right costal margin. His blood test showed Hct 30%, albumin 2.5 g/dL, other unremarkable. Computerized tomography (CT) of whole abdomen was performed and showed multiple ill-defined cystic lesions entire right lobe varying in size from 1.5 cm to 10x15.5 cm with irregular wall and enhancing rim on the arterial phase (Figure 1,2), right pleural effusion and multiple pulmonary nodules. In the night of admission date, the patient developed sudden cardiac arrest and death in the later. Post mortem ultrasound guided liver biopsy at the largest lesion in right lobe of liver was done. There were multiple pieces of grey liver tissue from biopsy and these tissue were sent for histological examination. On microscopic examination, the tissue had characteristic of well differentiated squamous cell carcinoma (Figure 3,4).

Conclusion: Cystic liver metastases are uncommon. Colonic adenocarcinoma is the common primary cancer for this condition. Squamous cell carcinoma can present as cystic mass when metastases to liver and should be in the differential diagnosis causes of cystic liver metastases.

Keywords: cystic liver metastasis, squamous cell carcinoma
Figure 1. CT scan findings: largest cystic mass in cystic right lobe of liver

Figure 2. CT scan findings: multiple small mass in right lobe of liver

Figure 3,4. Histologic examination of liver tissue: well differentiated squamous cell carcinoma with keratin pearl formation (H&E, orig x 100)
Case report: Lower gastrointestinal bleeding from pseudomembranous colitis

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Background: Acute lower gastrointestinal bleeding (LGIB) is an emergency condition in general practice. The common causes of LGIB are diverticula, arteriovenous malformation, hemorrhoid and ulcer. Pseudomembranous colitis (PMC) usually occur in patient received antibiotic and can involve gastrointestinal tract with colon predominate site. Pseudomembranous colitis can present with watery diarrhea, mucous bloody diarrhea, abdominal pain and fever, but hematochezia without diarrhea is an uncommon manifestation.

Case report: A 86-year-old woman was admitted for urinary tract infection (UTI) and pneumonia. She had underlying diabetes mellitus, hypertension, chronic kidney disease and Parkinson’s disease. There was no history of previous gastrointestinal bleeding, gastrointestinal disease or NSAIDs use. She received ceftriaxone and azithromycin and change to meropenem in five days later. On the tenth hospitalization day, she was note to develop deep vein thrombosis on left femoral vein and anticoagulant was initiated. One week later after receiving anticoagulant, she was note to develop painless hematochezia without diarrhea. Physical examination revealed blood pressure 110/70 mmHg, pulse rate 86/minute, mild pale conjunctiva, no abdominal tenderness. Her blood test showed Hb 10.7g/dL, Wbc 11,680/mm³, Plt 329,000/mm³, prothrombin time 55.5 seconds (normal range 9.5-13.5) and INR 3.57. After initial management with intravenous fluid, parenteral vitamin K replacement and fresh frozen plasma transfusion, the patient was sent for sigmoidoscopy next day and showed multiple yellowish patch on erythematous mucosa with focal hemorrhagic spots from rectum to descending colon (Figure 1,2), normal transverse colon. Biopsy specimens taken from yellowish patch showed findings compatible with PMC (Figure 3,4). The patient received oral metronidazole for treatment of PMC for ten days. There was no further recurrence of bleeding during admission and patient was discharged in the next 2 weeks.
Conclusion: Pseudomembranous colitis can present with lower gastrointestinal bleeding without diarrhea. This condition should be in the differential diagnosis causes of lower gastrointestinal bleeding especially in patients receiving board spectrum antibiotic.

Keywords: lower gastrointestinal bleeding, pseudomembranous colitis

Figure 1. Endoscopic findings: yellowish patch at rectum

Figure 2. Endoscopic findings: yellowish patch at sigmoid colon

Figure 3–4. Histological examination from yellowish patch: summit or volcano lesion. Focal ulceration of the colonic mucosa with exudation of a pseudomembrane made up of inflammatory cells, fibrin, and necrotic debris. The adjoining mucosa is intact. (left :H&E, orig. mag x 40, right: H&E, orig. mag x 100)
The use of a safety card for the prevention of needlestick injuries to medical personnel in the Kingdom of Thailand


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Background: During the mid-1980s with the first documented case of HIV transmission from a needlestick to a healthcare worker was proven. The practice of standard safety measures was not enough; better devices were needed. Thus, the advent of the safety syringe reduced the number of needlestick injuries drastically. Approximately 80% of needle stick injuries can be prevented with the use of safety needle devices.

Objective: One of the major setbacks of the safety syringe in developing countries such as Thailand is the cost. Safety syringes can cost two to three times what a standard syringe costs. We have developed a safety card that is cost effective and easy to use.

Methods: A safety card designed by Dr. Tassanai Parittotokkaporn MD., Ph. D. was distributed to 147 nurses at the Princess Maha Chakri Sirindhorn Medical Center in Nakhonnayok, Thailand. They were required to trial the safety device for a period of two months from May to June of 2013. The number of injuries estimated by the nurses in their careers, the last 2 year period, and the trial period were reported. The nurses were given an evaluation with seven points of interest to be assessed.

Results: During the trial period of May and June, 2013; there was one reported needlestick injury. By the RNs admission, she was not using the safety card at the time of the injury. She was compliant with the use of the card post injury and did not suffer another event. The compliance with the safety card was at 30-60% and satisfaction levels were at 30-80%.

Discussion: Needlestick injuries cost the medical facility a minimum of 680 baht per injury. This is if there is no need for prophylactic medication, while the cost of a safety card is 50 baht.
Although the results of this trial are hopeful and have proven to be a step in the right direction for the prevention of exposure of blood borne pathogens via needlestick injuries, there is a need to increase compliance with the use of the safety card. The main complaint and primary reason for non-compliance as stated by the test population was the difficulty of use. Further testing and modification of the safety card as well as an extension of the campaign’s promotion is essential for increased safety to healthcare workers.

**Keywords:** safety card, needlestick injuries

Figure: SWU safety ond for the prevention of needlestick injuries
Transverse vaginal septum: a rare condition physicians need to keep in mind

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Background: Transverse vaginal septum is a very rare female reproductive congenital defect of the urogenital sinus and müllerian ducts caused by failure to fuse and/or canalize. Clinical manifestations vary with age at the presentation.

Case report: A 13 year-old girl presented with recurrent pelvic pain for two months and re-visited the emergency department several times. She had not reached her menarche and her secondary sexual characteristics were at tanner stage III. Upon physical examination, a large mobile abdomino-pelvic mass was palpable. The abdominal sonography showed the mixed hyper-hypoechoic cystic mass located at suprapubic area suspected of hematocolpos and hematometra size 3.41x5.1cm and 7.51x10.17cm, respectively. Upon gentle pelvic examination, the hymenal ring was identified and a thin transverse septum was detected at 2 cm from the hymenal level. On abdominal sonography, there was no anomaly of the KUB system found. Finally, complete transverse vaginal septum was diagnosed and the excision was done under general anesthesia.

Discussion: This case highlights the importance of suspicion and careful evaluation of all young females who may present with chronic abdominal pain and/or abdominal mass because this rare congenital defect might underlie these signs and symptoms. Owing to the low incidence, the physicians tend to delay diagnosis and treatment.

Conclusion: Transverse vaginal septum is a rare condition which the physicians should consider as a differential diagnosis in young patients with recurrent pelvic pain.

Keywords: transverse vaginal septum, hematocolpus, hematometra, müllerian anomalies
Isolated spontaneous large vaginal hematoma after normal delivery

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Background: Vaginal hematoma is not a common complication especially isolated vaginal hematoma. A large number of cases associated with operative vaginal delivery.

Case report: A 26-year-old pregnant women, presented with labor pain at 37 weeks of gestation. Two hours after postpartum, she complained about severe perineal pain. On pelvic and rectovaginal examination, we found 7x5 cm bluish extraluminal cystic mass at 5 cm from the vaginal outlet adjacent to left vaginal wall. This mass located at the opposite site of the episiotomy wound and extended cephalad next to the uterine cervix. The isolated vaginal hematoma was diagnosed. We transferred the patient to the operating room for evacuated hematoma. We made 3 cm vaginal incision at the hematoma site and removed clotted blood. After failed to identify the bleeding point, vasaline gauzes was packed in the hematoma space and vagina. After we removed and packed gauzes for 2 episodes, the bleeding still went on. The lower abdominal CT scan show a focal defect at left postero-lateral wall of vagina with adjacent large hematoma (11.8x5.9x9.2 cm) and small amount of retroperitoneal hematoma at left-sided pelvic cavity. There is no evidence of active contrast extravasation. We chose a conservative treatment by blood transfusion, antibiotic prophylaxis and continuous vaginal packing until the bleeding was spontaneous resolved.

Discussion: This case is demonstrated that vaginal hematoma can occur in non-operative vaginal delivery. Conservative treatment is an option that can provide a good outcome. Even this is a rare condition; the physician should not neglect the perineal pain.

Conclusion: Isolated large vaginal hematoma is a rare event which can be successfully treatment by conservative.

Key word: isolated vaginal hematoma, conservative treatment
The relationship of environmental tobacco smoke exposure during pregnancy and preterm delivery at HRH Maha Chakri Sirindhorn Medical Center

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Background: Preterm delivery (PTD) is a major cause of neonatal mortality and morbidity. About 9.6% of all births worldwide and 11.1% of all births in South East Asia were preterm. Research from other countries has found that exposure to environmental tobacco smoke (ETS) or secondhand smoke is a risk factor for PTD. The Thai and foreign population have different cultures and lifestyles, which include different smoking habits. In Thailand, no study has determined the causal relationship of ETS and PTD.

Objective: To determine the relationship of ETS exposure and PTD or delivery before 37 weeks of gestation at HRH Princess Maha Chakri Sirindhorn Medical Center.

Subjects and Methods: All women who delivered preterm neonates at HRH Princess Maha Chakri Sirindhorn Medical Center from May 2011 to April 2012 were recruited. After each case of preterm delivery was recruited, a participant who was in the same age group and delivered a term neonate in the same day was recruited. Participants from two groups, the first being mothers who delivered term neonates and the second being mothers who delivered preterm neonates, were interviewed about ETS, socio-demographic and behavioral characteristics, and reproductive and medical histories. Multiple logistic regression procedures were used to calculate adjusted odds ratio (AOR) and 95% confidence interval (CI) of ETS for PTD by controlling confounding factors.

Results: ETS exposure during pregnancy was a risk factor for PTD (AOR, 1.8; 95% CI, 1.1-2.8). Other risk factors included primiparity (AOR, 2.0; 95% CI, 1.3-3.0), prior PTD (AOR, 2.4; 95% CI 1.1-5.3), and poor antenatal care (AOR, 2.6; 95% CI 1.5-4.7).

Conclusion: ETS exposure during pregnancy was a risk factor for PTD.

Keywords: Environmental tobacco smoke, pregnancy, preterm delivery
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*Adjusted with height, education, family income, ETS, parity, prior PTD, prior abortion, interpregnancy interval, ANC*
Background: *Anaxagorea luzonensis* A : Gray (AL) has been used in Thai traditional medicine as a health-promoting herb. The extract of AL, rich in xantones and flavonoids, has oestrogenic, antioxidant, and antihistamine effects. There is however no evidence of vascular effects of quercetin, extracted and purified from *Anaxagorea luzonensis*.

Objective: The present study aimed to study effects of quercetin from AL on vasoactive agents in the rat thoracic aorta.

Materials and methods: Thoracic aorta from male Wistar rats were bathed in oxygenated Krebs-Henseleit solution, and stretched to an optimal passive tension of 1 g. Changes in tension were measured using isometric force transducers, and recorded on the PowerLab recording system. Aortic rings were pre-treated with quercetin (1, 10, and 100 µM) for 30 minutes before cumulative concentrations of vasoactive agents were constructed.

Results: Pre-incubation with quercetin (1, 10, and 100 µM) inhibited contractions induced by CaCl₂ (10 µM-30 mM) and methoxamine (0.1 - 300 µM). Vasorelaxation to carbachol (1 nM-30 µM) and sodium nitroprusside (0.1 nM-10 µM) however were not affected by pre-treatment with quercetin (1 and 10 µM).

Conclusion: Quercetin exerts a vasorelaxant effect via activation of extracellular Ca²⁺ influx, and/or Ca²⁺ release from intracellular store.

Keywords: Quercetin, *Anaxagorea luzonensis*, vasorelaxation, Ca²⁺ influx
Influence of laughing training on serum cortisol, Citric oxide and stress levels in Thai private officers

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**Background**: Laughing is a human physiological response which usually manifests happiness and humour. At present, laughing training is a kind of alternative medicine used as a treatment.

**Objective**: To investigate the influence of laughing training on serum cortisol, serum nitric oxide, and stress levels in Thai private officers.

**Materials and methods**: Forty Thai male and female volunteers were divided into control and experiment groups participated in a laughing training for 8 consecutive weeks, 3 days/week, and 60 minutes/day. At 8 am venous blood (8 ml) was collected pre and post-laughing training program. Individual stress level was evaluated by Suanprung Stress Test-20 at the same period. Serum cortisol was assayed by electrochemiluminescence immunoassay (ECLIA). Moreover, serum nitric oxide was indirectly measured by quantitative conversion amount of nitrates to nitrites using a fluorescence high sensitivity nitrite assay kit.

**Results**: No significant difference between pre- and post-laughing levels of serum cortisol was observed in each group. Similarly, pre-and post-laughing levels of serum nitric oxide also showed no significant changes. Moreover, stress level before and after laughing training of each group evaluated by Suanprung Stress Test-20 showed no significant difference.

**Conclusion**: Laughing training for 8 consecutive weeks had no effect on serum cortisol, serum nitric oxide, or stress levels in Thai private officers. It is concluded that this training is not vigorous enough to activate the mechanisms controlling nitric oxide and cortisol.

**Keywords**: laughing training, cortisol, nitric oxide, stress

**Acknowledgement**: This research was supported by the 2555 annual fiscal budget from the Faculty of Medicine, HRH Princess Maha Chakri Sirindhom Medical Center (MSMC), Srinakharinwirot University, Thailand.
Structural modification and anticancer activity of monoacylglycerols derivatives

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Background: Monoacylglycerols (MAGs) contain one fatty acid covalently bonded to a glycerol by an ester linkage. In addition to emulsifying properties which renders MAGs able to be used in various fields of food industry, they show biological activities such as antimicrobial and anticancer activity. There were reports demonstrating that the hydrocarbon chains structure present on MAGs somewhat exhibited antimicrobial activity. Moreover, the structural modification of some bioactive compounds could enhance the biological activity.

Objective: This work aims to synthesize and modify the chemical structure of MAGs and investigate the cytotoxicity of them against human cancer and normal cell lines

Materials and methods: Three kinds of MAGs (monomyristin, monoolein, monopalmitin) and the hydroxy-substituted isopropylidene group MAGs (modified MAGs) were synthesized then purified by solvent extraction and adsorption chromatography. The purity of the compound was verified by $^1$H-NMR, $^{13}$C-NMR, HSQC, COSY, and mass spectrometry. The high quality of MAGs and modified MAGs products were then used to evaluate the cytotoxicity against human cancer and normal cell lines using the MTT assay.

Results: Monomyristin and monopalmitin showed antiproliferative activity against cervical cancer (HeLa) cell line only while monoolein gave the activity not only to cervical cancer (HeLa) cell line but also to human histiolytic lymphoma (U937) and acute T cell leukemia (Jurkat) cell lines. In this
study, all of these MAGs were modified by adding isopropylidene protecting groups (1,2-O-isopropylidene glycerides) in the fatty acid side chain. All the isopropylidene contained MAGs exhibiting stronger anticancer activity against all cancer cell lines by lowering the IC$_{50}$ values compared to that of the original MAGs. Our result agreed with other reports suggesting that isopropylidene structure augmented the biological activity of the original compounds.

**Conclusion:** This result showed that the isopropylidene group in fatty acid moiety of monoglycerides plays a role in increasing the anticancer activity.

**Keywords:** Monomyristin, monoolein, monopalmitin, monoglyceride, anticancer

**Acknowledgement:** This research was supported by the 2555 annual fiscal budget from the Faculty of Medicine, HRH Princess Maha Chakri Sirindhom Medical Center (MSMC), Srinakharinwirot University, Thailand.
การแสดงออกของยีน Apoptosis ระหว่างกลุ่มหญิงที่ติดเชื้อและไม่ติดเชื้อเอชพีวี และมีการติดเชื้อเอชไอวีร่วม

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* คณะแพทยศาสตร์ มหาวิทยาลัยศรีนครินทรวิโรฒ
** ศูนย์วิจัยโรคเอดส์ สภากาชาด

ความเป็นมา: เผชิญعتمدลูกโคนวิรัศจากภาวะการติดเชื้อเอชพีวี ทำให้เกิดการเปลี่ยนแปลงของเซลล์ เมื่อมีการติดเชื้อชนิดนี้ โปรตีน E7 และ E6 ซึ่งเป็น oncogene ทำให้เกิดความผิดปกติของเซลล์ ทำให้ร่างกายจะมีกระบวนการในการซ่อมแซมสารพันธุกรรมที่มีความผิดปกติและถ้าไม่สามารถที่จะแก้ไขได้ จะมีกระบวนการในการทำลายเซลล์ โดยผ่านกระบวนการอพพโทซิส (apoptosis) ซึ่งเป็นกระบวนการทำลายเซลล์และควบคุมความผิดปกติที่เกิดขึ้น

วัตถุประสงค์: ศึกษาการแสดงออกของยีนที่เกี่ยวข้องกับการตายของเซลล์ในกลุ่มผู้หญิงที่ติดเชื้อเอชพีวีที่มีการตรวจพบและไม่พบการติดเชื้อเอชพีวี

วิธีวิจัย: การศึกษาผู้หญิงที่เข้าร่วมในโครงการของศูนย์วิจัยโรคเอดส์ที่มีการตรวจคัดกรองมะเร็งปากมดลูกและตรวจคัดกรองการติดเชื้อเอชพีวี และทำการคัดเลือกกลุ่มตัวอย่างโดยการสุ่ม จากนั้นนำตัวอย่างเซลล์จากปากมดลูกมาทำการสกัดสารพันธุกรรมและนำไปตรวจหาการแสดงออกของยีน

ผลการศึกษา: กลุ่มประชากรหญิงที่ทำการศึกษาจำนวน 43 ราย อายุเฉลี่ย 35 ปี (21-45) มีการติดเชื้อเอชพีวีนิดเด็กกว่าสูงสุด 16, 18, 31, 33, 51, 52, 58, 59 และ 68 จำนวน 20 คน และมีการติดเชื้อเอชพีวีมากกว่าสูงสุด จำนวน 8 คน โดยมีการติดเชื้อดังกล่าว 2 คน มีการติดเชื้อ Bcl2, Bax, p53 และอัตราของการ Bax ต่อ Bcl2 ในกลุ่มประชากรทั้งหมดพบว่ามีค่าเฉลี่ย 1.19, 1.39, 1.18 และ 1.14 ตามลำดับ และในกลุ่มที่ไม่ติดเชื้อเอชพีวีจะพบว่าอัตราการแสดงออกของยีนมีค่าน้อยกว่ากลุ่มที่ติดเชื้อเอชพีวีอย่างมีความชัดเจนระหว่าง Bax ต่อ Bcl2

บทสรุป: จากการศึกษาการแสดงออกของยีนที่เกี่ยวข้องกับการตายของเซลล์ในกลุ่มประชากรหญิงที่ติดเชื้อเอชพีวีและไม่ติดเชื้อเอชพีวี พบว่ากลุ่มที่ไม่ติดเชื้อเอชพีวีมีอัตราการแสดงออกของยีนที่น้อยกว่ากลุ่มที่ติดเชื้อเอชพีวี

คำสำคัญ: human papillomavirus, apoptosis
Evaluation of learning ability of medical students in biochemical study

Kannika Sermsuvitayawong, Chantra Tanunyutthawongse, Wasana Sukhumsirichart, Wanlaya Thanechpongtamb, Sirinuin Nilwarangkoon, Nudjaree Tanjapatkul, Kosum Chansiri, Ramida Watanapokasin

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Background: The subject of biochemistry is quite difficult for medical students to understand because they have to imagine the interactions of biochemical molecules and the regulation that occurs in the cell at the molecular level.

Objective: Our speculation is that the learning sequence of each topic is considered as an important factor that may affect learning ability of students. So, in this study the sequences of topics were evaluated by comparing between teaching the parts of macromolecules either teaching separately or in combination with its metabolism sequentially.

Materials and methods: The analysis was done using the examination scores of different medical student groups at Srinakharinwirot University that studied different topic sequences.

Results: The data analysis revealed that the new topic sequence rearrangement in which each macromolecule was taught following by its metabolic pathway was significantly better than the former sequences.

Conclusion: This data demonstrates that the improved topic sequences are important for learning ability which will be useful for teaching development in the future.

Keywords: biochemistry topic sequence, medical students, learning ability
สืบเนื่องจากบุคลากรภาควิชาการวิถีวิทยาศาสตร์ได้เห็นประโยชน์จากการที่ได้เข้าร่วมปฏิบัติงานในโครงการเพื่อสุขภาพ สตส. และเพื่อตอบสนองนโยบายของคณะแพทยศาสตร์ที่ให้มีการสอดแทรกแนวความคิดทางด้าน Health promotion ในการเรียนการสอน ทางภาควิชาการวิถีวิทยาศาสตร์จึงได้จัดให้มีกิจกรรมส่งเสริมสุขภาพให้กับนิสิตแพทย์ชั้นปีที่ 2 มาตั้งแต่เดือน กรกฎาคม พ.ศ. 2552 โดยมีจุดประสงค์เพื่อเป็นการปลูกฝังข้อคิดในการส่งเสริมสุขภาพแก่ประชาชนนอกจากจากการเป็นผู้รักษาและเพื่อให้นิสิตได้เห็นการปฏิบัติจริงสามารถนำไปประยุกต์ใช้ได้ในอนาคต ต่อมาในปี พ.ศ. 2555 ได้ขยายโครงการให้มีความต่อเนื่องเพิ่มการตรวจวัดสมรรถภาพต่อเนื่องในนิสิตกลุ่มเดิมเมื่อขึ้นไปอยู่ชั้นปีที่ 3 เพื่อศึกษาความเปลี่ยนแปลง ตามที่ได้รับการประเมินจากผู้ตรวจประกันคุณภาพ ในการทำกิจกรรมจะประกอบด้วยสองกิจกรรมหลักคือ 1. ตรวจคัดกรองความอ้วนได้แก่ การวัดดัชนีชี้วัดความอ้วนด้วย BMI และการวัดค่าความอ้วนได้แก่การวัดดัชนีชี้วัดความอ้วนด้วย non invasive 2. การทดสอบสมรรถภาพร่างกายว่างายโดยใช้ Step test exercise เป็นเวลาหนึ่งนาที โดยมีการตรวจวัดขีดพิกัดและความต้านทานก่อนและหลังการทดสอบ เมื่อจบการทดสอบจะมีการแปลผลเพื่อนิสิตให้ทราบถึงสมรรถภาพของตนเอง และคำแนะนำเพื่อพัฒนาความสุขภาพของตนเองต่อไป จากการดำเนินงานนี้ผ่านมาได้พบว่ามีบางรายที่มีความต้านทานสูง หรือบางรายที่เหนื่อยง่ายจากการออกกังวลเพียงหนึ่งนาที จึงเป็นแนวคิดที่จะทำการศึกษาวิจัยต่อเนื่องว่ามีการเปลี่ยนแปลงของตนเองและมีการปรับสมดุลการดำเนินชีวิตการดูแลสุขภาพทั้งด้านอาหาร การออกกำลังกาย และการรักษาตัวเอง จะส่งผลให้นิสิตเกิดการเรียนรู้ด้านสุขภาพ มีสุขภาพที่ดียิ่งขึ้นทั้งกายและใจ เพื่อเป็นประโยชน์ต่อการช่วยเหลือผู้อื่นต่อไป ไปในอนาคต

คำสำคัญ BMI, step test exercise, blood pressure
Anti-adhesive effect of *Phyllanthus emblica* extract on human fibrosarcoma cells

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Background: Phyllanthus emblica (PE) fruit has been used in traditional medicine due to its wide range of biological activities. Several pharmacological actions have been mentioned such as analgesic, antibacterial, anti-inflammatory, antipyretic, antioxidant, antimitogenic, including anticancer actions.

Objective: To evaluate the anti-adhesive potential of PE extract on human fibrosarcoma cells.

Materials and methods: The human fibrosarcoma cells, HT1080, were trypsinized, washed with serum-free medium, incubated with various concentrations of PE extract for 0, 3, and 5 h. Cells were then reseeded at a density of 4x10^4 cells/well on the 96-well culture plates and allowed to adhere for 50 min at 37°C in a humidified atmosphere of 5% CO₂. After washing with PBS, the adherent cells were fixed and stained with 0.1% crystal violet, washed, and air-dried. The stained cells were lysed with 10% acetic acid and then the dye intensity was quantified by measuring the absorbance at 595 nm using an microplate reader.

Results: PE extract could suppress the adhesion of fibrosarcoma cells with both dose- and time-dependent fashion with IC₅₀ values at 1.95 ± 0.34, 1.35 ± 0.25, and 1.16 ± 0.28 mg/ml for the pretreatment time 0, 3, and 5 h, respectively.

Conclusion: Our data showed that PE extract could suppress the adhesion of human fibrosarcoma cells. It might be possible that PE extract has a potential to prevent the adhesion of escaped cancer cells from primary cancer mass to remote tissues. Further investigations to determine the molecular mechanism of anti-adhesive action are worthwhile.

Keywords: Phyllanthus emblica, adhesion, metastasis

Acknowledgement: This research was financially supported by the annual fiscal budget from Faculty of Medicine, HRH Princess Maha Chakri Sirindhorn Medical Center (MSMC), Srinakharinwirot University, Thailand.
Antiangiogenic effects of 1-((1-(1H-indazol-6-yl)-1H-1,2,3-triazol-4-yl)methyl)-3-(3-chloromethylphenyl) urea on human endothelial cell line

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Background: Angiogenesis is an important process for tumor growth by supporting metastasis and invasion. An imbalance of regulators in tumor growth activates an angiogenic phenotype that leads to sprouting new blood vessels from pre-existing endothelium to transport growth factors, oxygen, and various nutrients to cancer mass. Vascular endothelial growth factor (VEGF) is particularly a strong proangiogenic factor that controls endothelial cells in many aspects. VEGF binds to VEGFR-2 which results in the formation of VEGF/VEGFR-2 complex, VEGFR-2 dimerization, and activation of the phosphorylation of several tyrosine residues in multiple positions. The activation of VEGFR-2 in the vascular endothelial cells causes cell proliferation, survival, and migration.

Objective: This study aimed to investigate antiangiogenic effect of a synthetic urea derivative 1-((1H-indazol-6-yl)-1H-1,2,3-triazol-4-yl)methyl)-3-(3-chloromethylphenyl)urea (VH02) on endothelial cell line (EA.hy 926).

Materials and methods: MTT assay is a quantitative colorimetric of (3-(4,5-dimethylthiazol-2-yl)2,5-diphenyl tetrazolium bromide that is used to analyze cell viability from mitochondria reductase activity. The IC$_{50}$ of VH02 for VEGFR-2 kinase was shown by using in vitro VEGFR-2 kinase assay. Endothelial cell migration was accomplished by quantifying the migrated cells that passed through the porous membrane with a transwell chamber. In vitro capillary-like tubule assay was performed to study endothelial cell differentiation and angiogenesis on matrigel.
Results: VH02 had an inhibitory effect on cell viability in EA.hy926. Furthermore, VH02 compound inhibited the phosphorylation of VEGFR-2 with IC_{50} values 0.56 µM. Finally, we found that VH02 had a potential to inhibit VEGF-induced endothelial cell migration and capillary-like tube formation at low doses compared with VEGF 25ng/ml (p<0.05).

Conclusion: VH02 successfully inhibited VEGF-induced *in vitro* angiogenesis including cell viability, migration, and capillary-like tube formation.

Keywords: Antiangiogenesis, Vascular endothelial growth factor (VEGF), vascular endothelial growth factor receptor 2 (VEGFR-2)

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Soybean isoflavones enhance the synthesis and secretion of beta-defensins in porcine endometrial epithelial cells in response to lipopolysaccharide stimulation

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Background: The mucosal surface of endometrium defends against uterine infection through many antimicrobial peptides including β-defensins (BD). Protein synthesis and secretion along the female reproductive organs is under the regulation of sex-steroid hormones. Consuming of soybean containing mostly genistein (Ge) and daidzein (Di), isoflavones with estrogenic activity, may produce the same effect.

Objective: The present study aims to determine the effect of phytoestrogen on the expression and secretion of BD in primary culture of porcine endometrial epithelial (PE) cells under normal and lipopolysaccharide (LPS)-stimulated conditions.

Materials and Methods: PE cells were cultivated in estrogen-free media and pretreated with phytoestrogen for 48 h following with LPS stimulation. RNA and cultured medium were collected to determine the BD expression and secretion by RT-PCR and ELISA, respectively.

Results: PE cells expressed BD1-4 in both normal and LPS-stimulated conditions. Following LPS stimulation, the expression of BD1, 2 and 4 was decreased while the BD3 was increased compared to internal control GAPDH. Treatment with Di (10 nM) and Ge (1 µM) tended to increase BD1-4 expressions which were not observed after LPS stimulation. Di or Ge appeared to increase the secretion of BD1, 2 and 4 in both normal condition and in response to LPS stimulation, although such increases were observed at different time collection and concentration.

Conclusion: Ge and Di increased both the expression and secretion of BD1-4 under normal condition and had no effect on the expression under LPS stimulation. The stimulatory effect of these soybean isoflavones on the secretion of BD in both normal and LPS stimulation could be beneficial to enhance mucosal innate immunity to protect the endometrium against pathogen invasions.

Key words: innate immunity, antimicrobial peptide, phytoestrogen
Soybean isoflavones on the expression of toll-like receptor in human endometrial carcinoma cell line

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Background: Relationships between the female immune system and the occurrence of reproductive diseases endometriosis and cancer have been suggested. Toll-like receptors (TLRs) 2 and 3, component of innate immune system recognizes pathogen associated molecular patterns (PAMPs) of significant bacterial and viral microorganism carried by sexual transmission. Endometrial TLRs are cyclically expressed during the menstrual cycle. Genistein (Ge), a soybean isoflavone structurally related to endogenous estrogen, may produce the estrogen-like effect.

Objective: To determine whether genistein modulates the expression of TLR-2 and -3 in human endometrial cells

Materials and Methods: Human endometrial carcinoma cell line (RL-95) were cultivated in estrogen-free medium in the presence of Ge (0.1, 1, 10 \( \mu \)M) or vehicle (DMSO) for 48 h. Cell lysates of all samples were collected for semi-quantitative western blot analysis.

Results: The RL-95 cells showed the same level of expression TLR-2 and TLR-3 proteins as compared to the internal control \( \beta \)-actin protein. TLR-2 protein expression was decreased by Ge at 0.1 \( \mu \)M while TLR-3 tended to be increased by Ge at 10 \( \mu \)M.

Conclusion: Ge differentially affects the TLRs expression in human endometrial epithelial cells. The modulatory effect of this isoflavone on TLR-3 expression can be applied to enhance the innate immune system against the viral infection in human endometrium.

Key words: genistein, toll-like receptor, human endometrial carcinoma
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