

Research Methodologies

HKCOG Research Course
2.4.2016

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Research and the Specialist Trainee

- **Why** do research?
- **What** should be my research aims?
- **What** subject should I research? →
What is/are your research question(s)?
- **When** should I undertake research during training?

Research and Time Management



Research & Publication

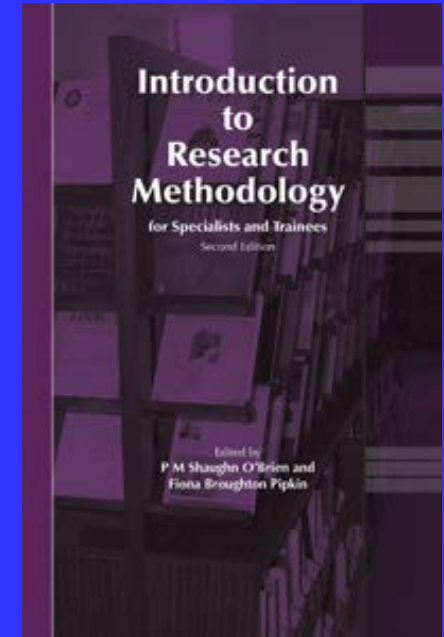
If research has been performed but not published, then it is considered incomplete and better if not started in the first place!



Introduction to Research Methodology for Specialists and Trainees (2nd edition, 2007)

*PM Shaughn O'Brien, FRCOG and
Fiona Broughton Pipkin, FRCOG*

This book is written for trainees in all subjects related to health. Research-orientated questions are incorporated into the majority of Royal College membership examinations; for example, in the OSCE station a research study or paper has to be criticised.



- 1. Research and the specialist registrar**
- 2. Time management**
- 3. Basic computer skills, word processing, databases, spreadsheets and presentation packages**
- 4. Effective literature searching**
- 5. Critical appraisal of the research literature**
- 6. Evidence-based medicine and getting research into practice.**
- 7. Audit**
- 8. Clinical trials**
- 9. Animal research**
- 10. Fetal research**
- 11. Laboratory research and quality control**
- 12. Data management**
- 13. Statistics**
- 14. Epidemiology**
- 15. Ethics, ethics committees, consent, fraud**
- 16. Informing patients about research**
- 17. Supervising and being supervised**
- 18. Applying for a grant**
- 19. Communicating research: working with the media**
- 20. Presenting a paper**
- 21. How to set about writing your first paper**
- 22. How to write a thesis**



Introduction to Research Methodology for Specialists and Trainees Paperback – 14 Aug 2006

by P.M. Shaughn O'Brien (Author), P.M. Shaughn O'Brien (Editor)

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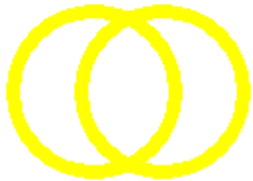
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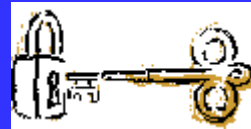
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This book is written for trainees in all subjects related to health. Research-orientated questions are incorporated into the majority of Royal College membership examinations; for example, in the OSCE station a research study or paper has to be criticised.

Correlational



Causal-Comparative



Experimental



Types of
Research
Methodologies

Survey*



Action Research



Historical



Ethnographic*



Past

Present

Future

Cross-sectional study

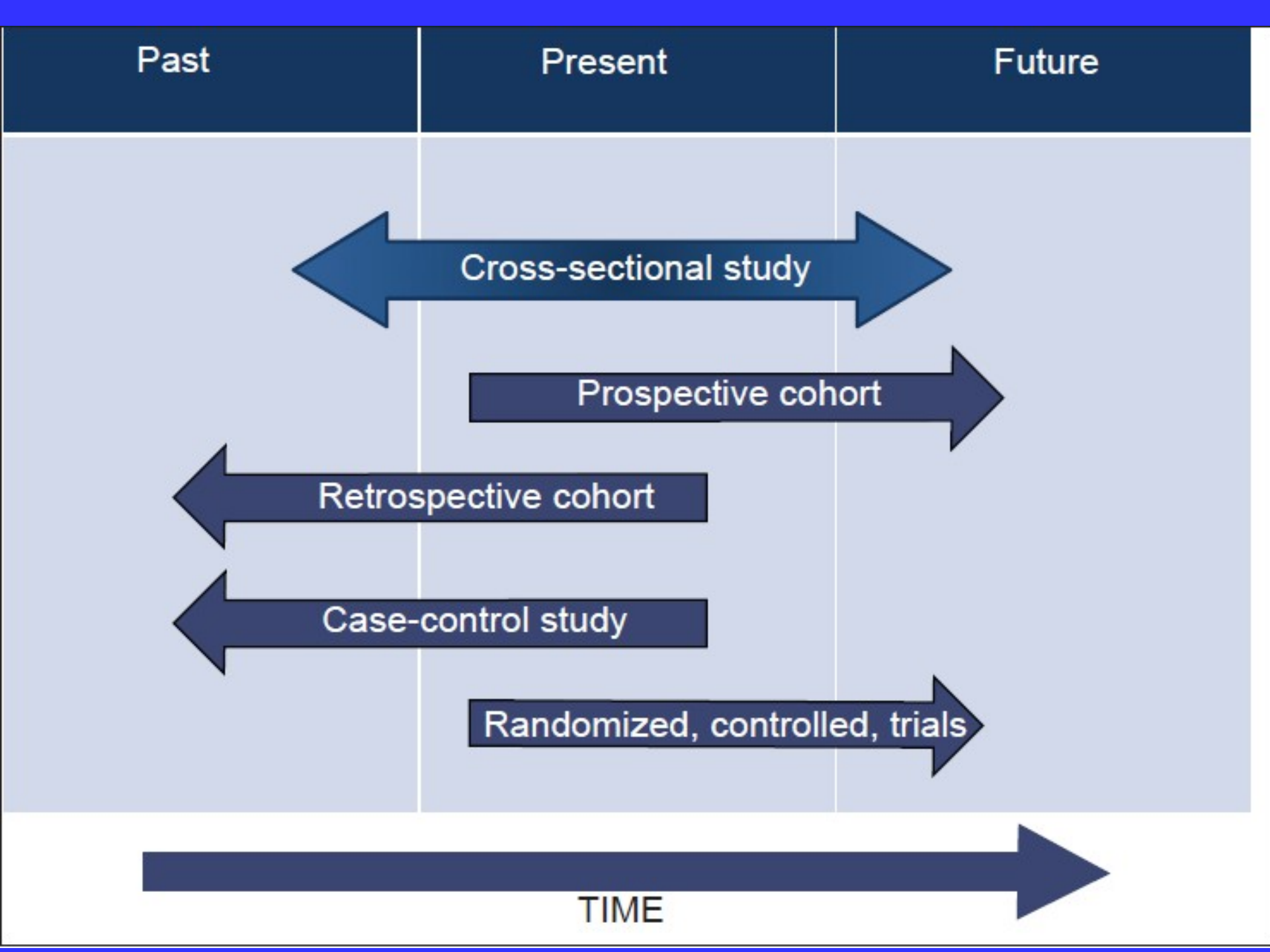
Prospective cohort

Retrospective cohort

Case-control study

Randomized, controlled, trials

TIME



Analytical Study

Experimental

Uncontrolled
Trials

Controlled
Trials

➤ Non-randomized

➤ Randomized

Observational

➤ Cohort

➤ Case-control

➤ Cross-sectional

➤ Longitudinal

Classification of studies

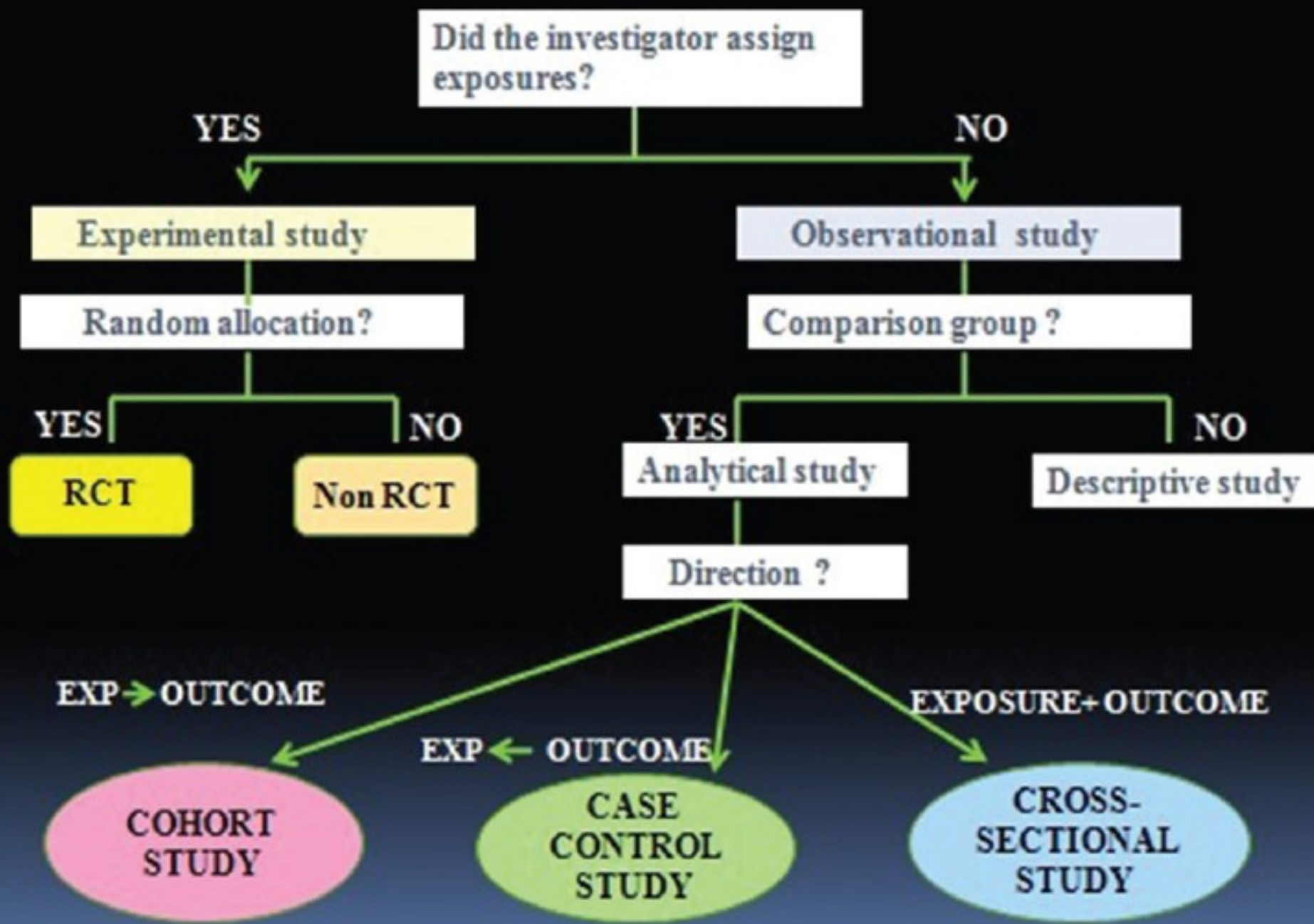
Observational study

- Descriptive study
- Analytical study
 - ✓ Cross sectional study
 - ✓ Case control study
 - ✓ Cohort- follow up

Experimental study

- Randomised control trials/
clinical trials
- field trial/ community
intervention trial
- Community trial

All these study complement each other



The Evidence Pyramid



Laboratory



[J Neurointerv Surg](#). 2014 Jun;6(5):394-9. doi: 10.1136/neurintsurg-2013-010813. Epub 2013 Jul 31.

Human placenta as an ex vivo vascular model for neurointerventional research.

[Kwok JC](#)¹, [Huang W](#), [Leung WC](#), [Chan SK](#), [Chan KY](#), [Leung KM](#), [Chu AC](#), [Lam AK](#).

+ Author information

Abstract

BACKGROUND: Human placenta is a convenient resource for biomedical research, and has not yet been used for neurointerventional surgery research.

OBJECTIVE: Our objective was to explore the feasibility of using human placenta to test various endovascular interventions and for training.

DESIGN: 18 placentas soon after delivery were prepared for six pilot studies. (1) Study on anatomical similarity to human cerebral vessel. (2) Simulation of stent assisted coiling and flow diversion on an aneurysm model. (3) Simulation of intra-arterial thrombolysis. (4) Simulation of embolization of arteriovenous malformation with glues. (5) Simulation of mechanical thrombolysis and comparison of different devices. (6) Vascular model for training of neurointerventionalists.

RESULTS: When the chorionic plate vessels were compared with the cerebral cortical vessels, similarities were found in vascular branch patterns, histological cross sections, and angiographic appearances. Due to the semitransparency of its vessel wall, performance of flow diverter and stent assisted coiling of an aneurysm could be visualized under direct microscopic observation. Similarly, timing of clot lysis and glue polymerization could be estimated. Endothelial change after thrombectomy could be assessed by histological methods. From these pilot studies, the placenta model could be adopted to simulate various clinical situations. It is also ideal for interventional radiology training.

CONCLUSIONS: It is feasible to adopt the human placenta as an ex vivo vascular model in neurointerventional surgery research due to the fact that its vessels resemble the brain vasculature.

Laboratory



PLoS One. 2013 Apr 17;8(4):e60968. doi: 10.1371/journal.pone.0060968. Print 2013.

Noninvasive prenatal molecular karyotyping from maternal plasma.

Yu SC¹, Jiang P, Choy KW, Chan KC, Won HS, Leung WC, Lau ET, Tang MH, Leung TY, Lo YM, Chiu RW.

Author information

Abstract

Fetal DNA is present in the plasma of pregnant women. Massively parallel sequencing of maternal plasma DNA has been used to detect fetal trisomies 21, 18, 13 and selected sex chromosomal aneuploidies noninvasively. Case reports describing the detection of fetal microdeletions from maternal plasma using massively parallel sequencing have been reported. However, these previous reports were either polymorphism-dependent or used statistical analyses which were confined to one or a small number of selected parts of the genome. In this report, we reported a procedure for performing noninvasive prenatal karyotyping at 3 Mb resolution across the whole genome through the massively parallel sequencing of maternal plasma DNA. This method has been used to analyze the plasma obtained from 6 cases. In three cases, fetal microdeletions have been detected successfully from maternal plasma. In two cases, fetal microduplications have been detected successfully from maternal plasma. In the remaining case, the plasma DNA sequencing result was consistent with the pregnant mother being a carrier of a microduplication. Simulation analyses were performed for determining the number of plasma DNA molecules that would need to be sequenced and aligned for enhancing the diagnostic resolution of noninvasive prenatal karyotyping to 2 Mb and 1 Mb. In conclusion, noninvasive prenatal molecular karyotyping from maternal plasma by massively parallel sequencing is feasible and would enhance the diagnostic spectrum of noninvasive prenatal testing.

Comparative



J Matern Fetal Neonatal Med. 2015 Dec 23;1-5. [Epub ahead of print]

Is intrapartum translabial ultrasound examination painless?

Chan YT¹, Ng KS¹, Yung WK¹, Lo TK², Lau WL¹, Leung WC¹.

⊕ Author information

Abstract

OBJECTIVES: To find out whether intrapartum translabial ultrasound examination is painless by comparing pain score of ultrasound-based versus digital vaginal examination of foetal head station.

METHODS: In 94 women carrying uncomplicated-term singleton pregnancies, labour progress was assessed by translabial ultrasound, followed immediately by conventional digital vaginal examination. Pain scores (0-10) using visual analogue pain scale were obtained for both examinations. Forty-eight and forty-six sets of data were obtained in first and second stage of labour, respectively. The difference in pain scores between digital vaginal examination and translabial ultrasound was analysed.

RESULTS: The median pain score for translabial ultrasound was 0 (range 0-8), while that for vaginal examination was 4.5 (range 0-10), $p < 0.05$. There was no significant difference in pain scores between first and second stages of labour for translabial ultrasound ($p = 0.123$) and for vaginal examination ($p = 0.680$). The pain score for vaginal examination was higher than that of translabial ultrasound in 81.9%, similar in 13.8% and lower in 4.3% of cases. There was no statistically significant difference in pain scores obtained for digital vaginal examination by clinicians with different experience ($p = 0.941$).

CONCLUSIONS: Intrapartum translabial ultrasound is generally better tolerated than digital vaginal examination for assessment of labour progress, making it an acceptable adjunctive assessment tool during labour.

KEYWORDS: Foetal head station; labour; pain score; translabial ultrasound; vaginal examination

Correlation



J Matern Fetal Neonatal Med. 2015 Aug;28(12):1476-81. doi: 10.3109/14767058.2014.958459. Epub 2014 Sep 29.

Relationship between intrapartum transperineal ultrasound measurement of angle of progression and head-perineum distance with correlation to conventional clinical parameters of labor progress and time to delivery.

Chan YT¹, Ng VK, Yung WK, Lo TK, Leung WC, Lau WL.

+ Author information

Abstract

OBJECTIVE: To assess whether angle of progression (AOP) and head-perineum distance (HPD) measured by intrapartum transperineal ultrasound (ITU) correlate with clinical fetal head station (station); and whether AOP versus HPD varies during uterine contraction and relaxation. In a subset of primiparous women, whether these ITU parameters correlate with time to normal spontaneous delivery (TD).

METHODS: We evaluated prospectively 100 primiparous and multiparous women at term in active labor. Transabdominal and transperineal ultrasound (sagittal and transverse plane) were used to measure fetal head position and ITU parameters, respectively. Digitally palpated station and cervical dilatation were also noted. The results were compared using regression and correlation coefficients.

RESULTS: Station was moderately correlated with AOP ($r = 0.579$) and HPD ($r = -0.497$). AOP was highly correlated with HPD during uterine contraction ($r = -0.703$) and relaxation ($r = -0.647$). In the subgroup of primiparous women, natural log of TD has the highest correlation with HPD and AOP during uterine contraction ($r = 0.742$), making prediction of TD similar to that of using cervical dilatation.

CONCLUSION: ITU parameters were moderately correlated with station. There was constant high correlation between AOP and HPD. Prediction of TD in primiparous women using ITU parameters was similar to that of using cervical dilatation.

Domestic violence and postnatal depression in a Chinese community

W.C. Leung*, F. Kung, J. Lam, T.W. Leung, P.C. Ho

Department of Obstetrics & Gynaecology, Queen Mary Hospital, University of Hong Kong, Hong Kong, China

Received 17 May 2002; received in revised form 22 July 2002; accepted 24 July 2002

IJGO 2002

	Abused	Non-abused	P
SDSS (<i>n</i> =784)			
<8	105 (83%)	608 (92%)	0.003
≥8	21 (17%)	50 (8%)	
	<i>n</i> =126	<i>n</i> =658	
EPDS 1 (<i>n</i> =784)			
<10	76 (60%)	511 (78%)	0.000
≥10	50 (40%)	147 (22%)	
	<i>n</i> =126	<i>n</i> =658	
EPDS 2 (<i>n</i> =754)			
<10	85 (70%)	512 (81%)	0.010
≥10	36 (30%)	121 (19%)	
	<i>n</i> =121	<i>n</i> =633	
EPDS 3 (<i>n</i> =694)			
<10	96 (85%)	548 (94%)	0.001
≥10	17 (15%)	33 (6%)	
	<i>n</i> =113	<i>n</i> =581	



Opinions



Rapid aneuploidy testing, traditional karyotyping, or both?



Published online June 30, 2005
DOI:10.1016/S0140-6736(05)66791-8

See [Articles](#) page 123

In this issue of *The Lancet*, Allan Caine and colleagues,¹ on behalf of the UK Association of Clinical Cytogeneticists, express their concern about the UK National Screening Committee's recommendation that new screening programmes for Down's syndrome need not include karyotyping, and rapid aneuploidy testing can be offered (for trisomies 21, 18, and 13) with fluorescence in-situ hybridisation (FISH) or PCR. This reaction is not unexpected, because the entrance of new molecular diagnostics (FISH or PCR) into the scene of prenatal diagnosis challenges the role of traditional karyotyping.

However, in the age of ever-escalating cost in the provision of health care, especially in a government-funded system of medical care, such a programme is unlikely to be sustainable.

Caine and colleagues do not address two important issues relevant to the debate on rapid aneuploidy testing versus traditional karyotyping. The first issue is the role of ultrasound examination for structural abnormalities in the fetus. 70% of clinically significant abnormalities in chromosomes that are not detectable by FISH or PCR would have fetal abnormalities on ultrasound.¹³ The

Lancet 2005

*W C Leung, T T Lao

Division of Maternal Fetal Medicine, Department of Obstetrics and Gynaecology, Queen Mary Hospital, University of Hong Kong, HKSAR, China

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Rapid aneuploidy testing or traditional karyotyping, or both, in prenatal diagnosis

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Title Rapid aneuploidy testing or traditional karyotyping, or both, in prenatal diagnosis

Authors Leung, Wing-cheong
梁永昌

Issue Date 2010

Publisher University of Hong Kong (Pokfulam Road, Hong Kong)


Degree Doctor of Medicine

Subject Prenatal diagnosis.

Dept/Program Medicine

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Editorial



Editorial

VOL.20 NO.10 OCTOBER 2015

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New Algorithms in Prenatal Diagnosis

Dr Wing-cheung LEUNG

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Senior Vice President, Hong Kong College of Obstetricians & Gynaecologists



Dr Wing-cheung LEUNG

Editor

Advances in prenatal molecular diagnostics have revolutionized our traditional approach in prenatal diagnosis. New algorithms in prenatal diagnosis are evolving. (Figure 1) By knowing more & more with these new algorithms, are we moving towards Eugenics in Prenatal Diagnosis? To a certain extent we are! On the other hand, the ultimate goal is to provide enough information for pregnant women & their families to make choices for their next generations.

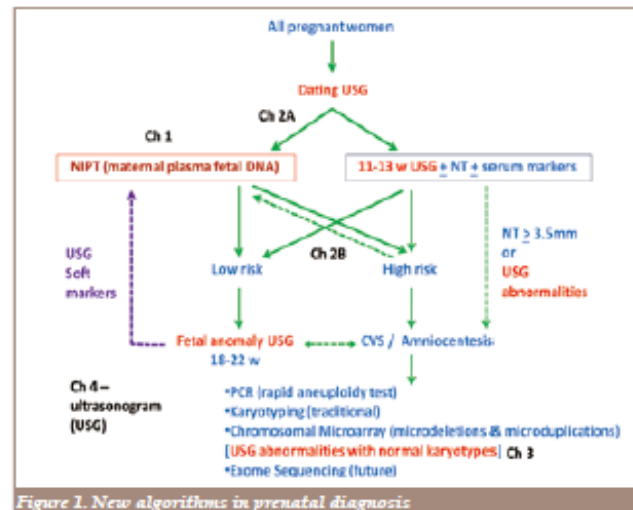
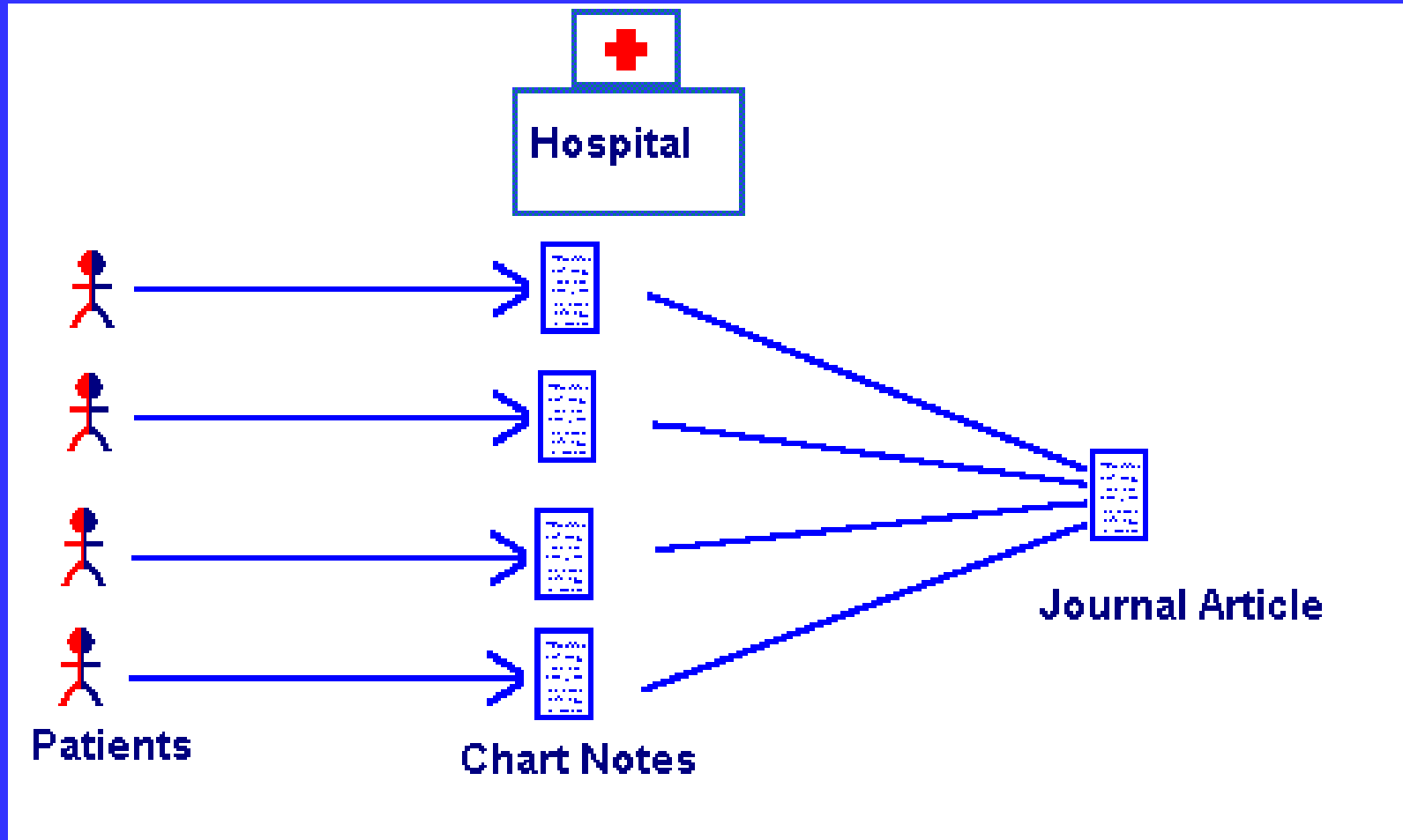


Figure 1. New algorithms in prenatal diagnosis

Screening at 11-13 weeks by a combination of maternal age, foetal nuchal translucency thickness (NT) measurement by ultrasound, and

Case Series and Case Reports



Unexpected intrauterine death following resolution of hydrops fetalis after betamethasone treatment in a fetus with a large cystic adenomatoid malformation of the lung

W. C. LEUNG*§, C. NGAI*§, T. P. W. LAM†, K. L. CHAN‡, T. T. LAO* and M. H. Y. TANG§

Departments of *Obstetrics and Gynaecology, †Radiology and ‡Surgery, Queen Mary Hospital, University of Hong Kong and §Prenatal Diagnostic and Counselling Department, Tsan Yuk Hospital, University of Hong Kong, Hong Kong SAR, China



Figure 1 Ultrasonographic image showing a longitudinal view of the cystic adenomatoid malformation of the lung.

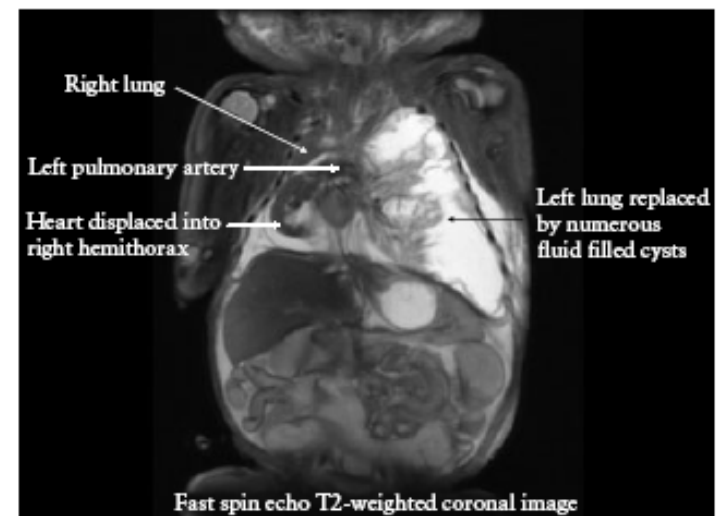
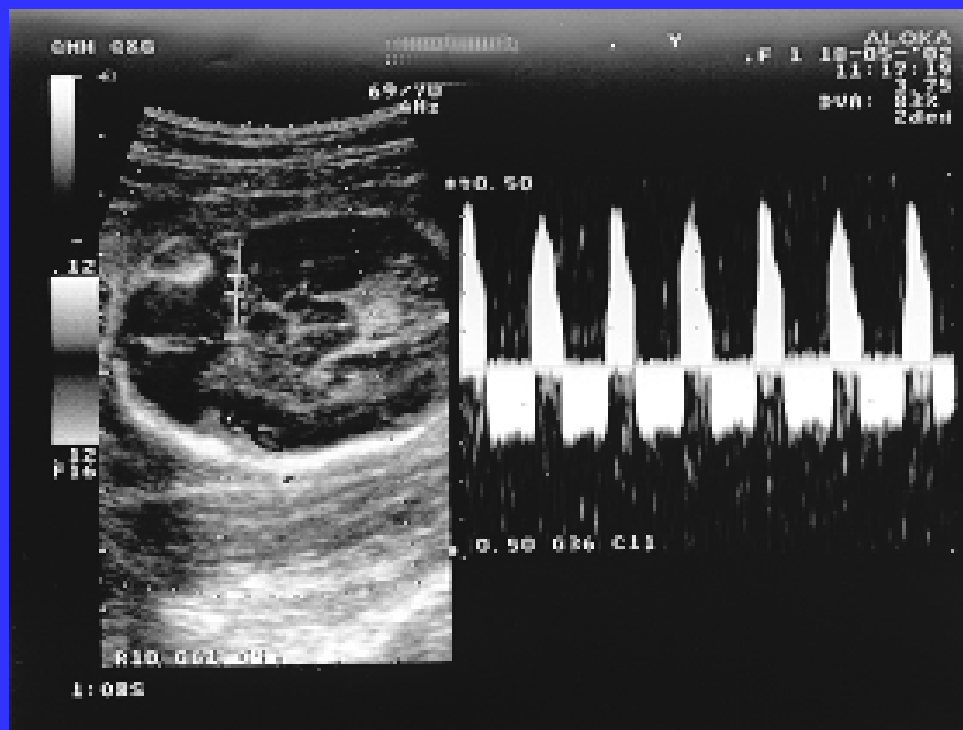


Figure 3 Postmortem magnetic resonance imaging scan of the fetus.

LETTER TO THE EDITOR

Reversed diastolic flow in the middle cerebral artery: is it a terminal sign in a growth-retarded fetus?

*Wing Cheong Leung *, Ka Yu Tse, Mary Hoi Yin Tang, Terence T. Lao*

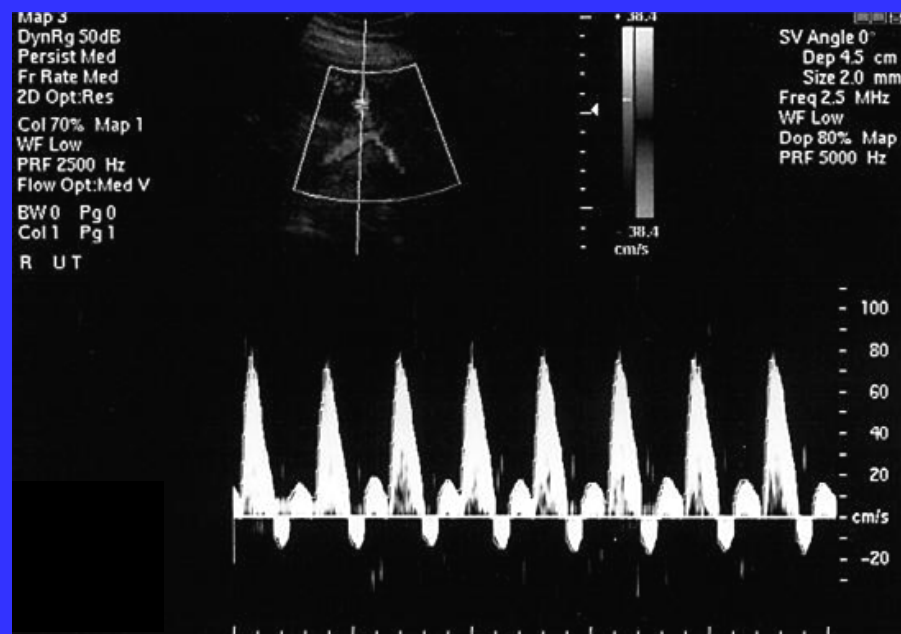
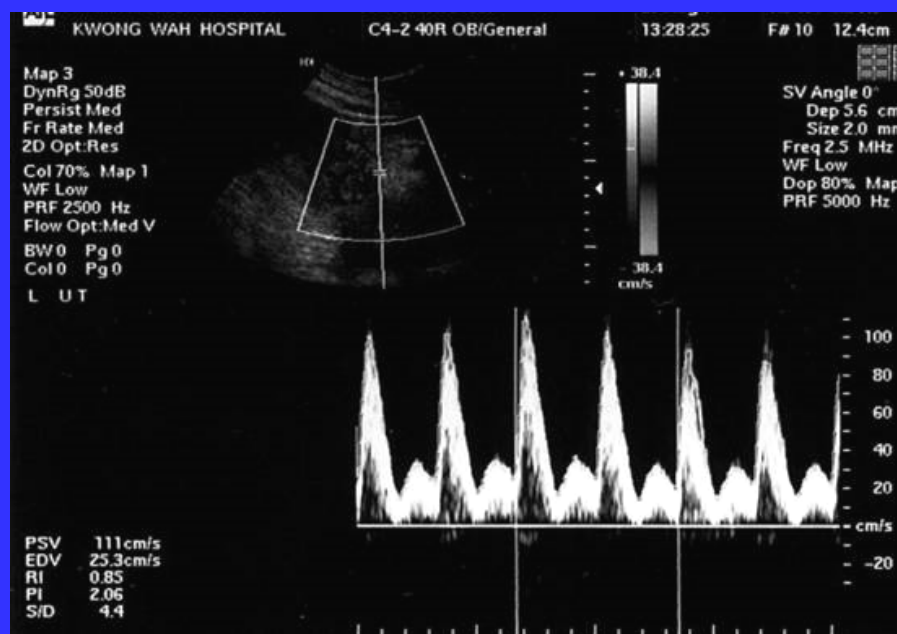


Reversed diastolic flow in the uterine artery – a new Doppler finding related to placental insufficiency?

W. L. LAU, H. S. W. LAM and W. C. LEUNG

UOG 2007

Department of Obstetrics and Gynaecology, Kwong Wah Hospital, Kowloon, HKSAR

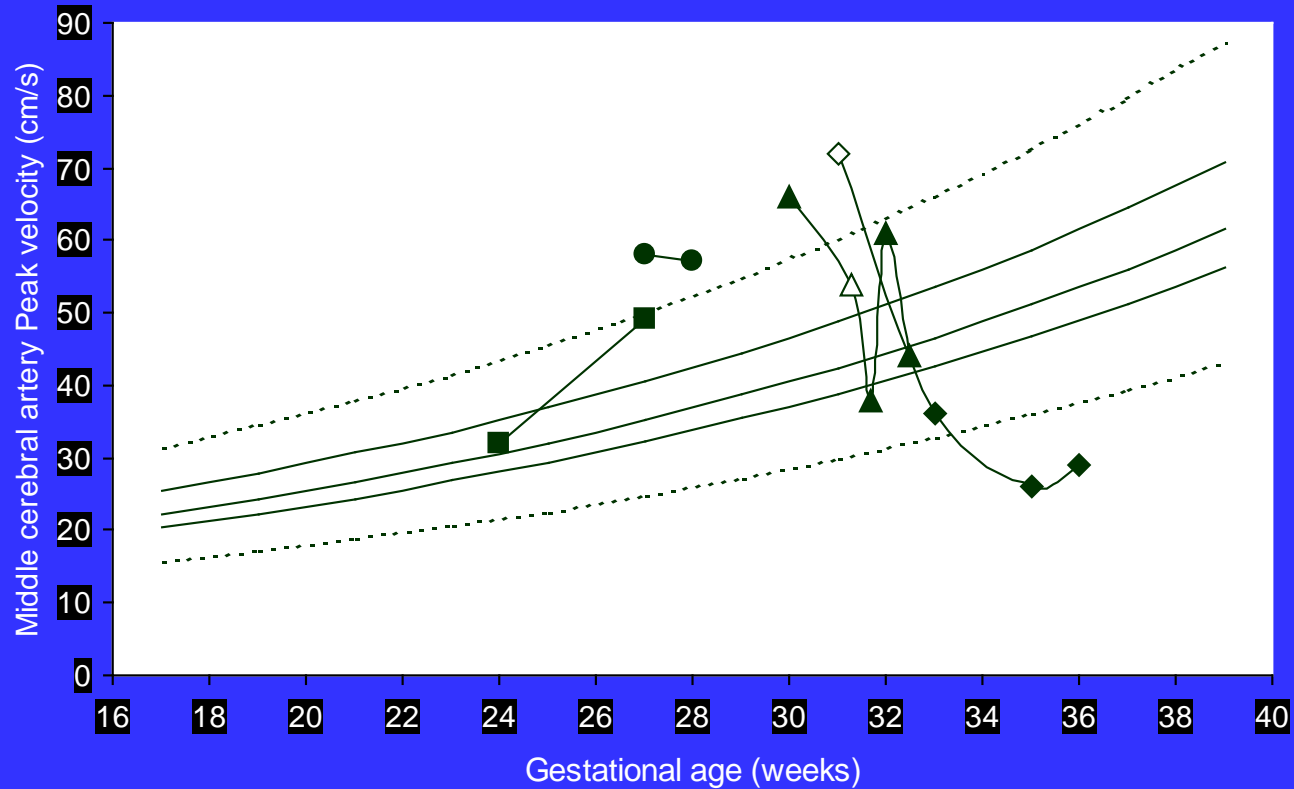
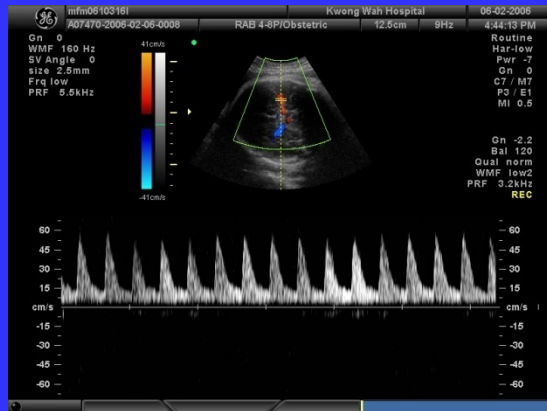


Serial sonographic findings of four fetuses with homozygous alpha-thalassemia-1 from 21 weeks onwards

W. C. LEUNG*†, D. OEPKES*, G. SEAWARD* and G. RYAN*

*Fetal Assessment and Treatment Unit, Department of Obstetrics and Gynecology, Mount Sinai Hospital, University of Toronto, Ontario, Canada and †Department of Obstetrics and Gynecology, Tsan Yuk Hospital, University of Hong Kong, Hong Kong, Republic of China

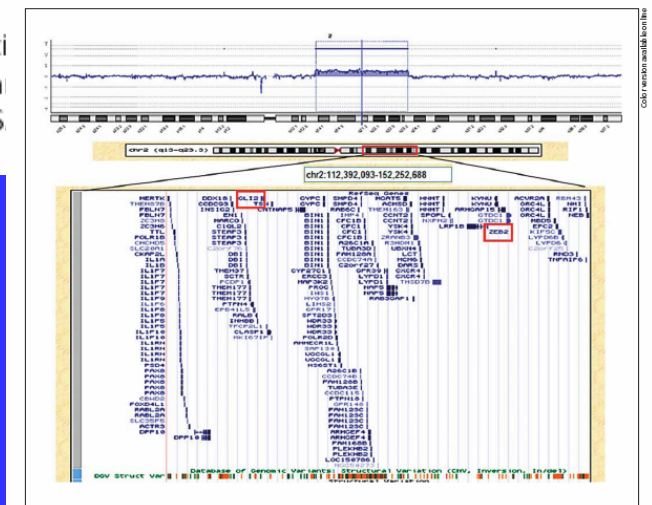
KEYWORDS: Alpha-thalassemia, Doppler, Fetal anemia, Ultrasound



Monozygotic Dichorionic Twins Heterokaryotypic for Duplication Chromosome 2q13-q23.3

W.C. Leung^a H. Choi^a W.L. Lau^a L.K. Ng^b E.T. Lau^b F.M. Lo^c K.W. Choy^d
T.K. Lau^d M.H.Y. Tang^b R. Chin^a

^aDepartment of Obstetrics and Gynaecology, Kwong Wah Hospital, ^bPrenatal Diagnostic Department, Tsan Yuk Hospital, ^cClinical Genetic Service, Department of Health, ^dDepartment of Gynaecology, Prince of Wales Hospital, Chinese University of Hong Kong, Hong Kong, S



Successful Treatment of Severe Fetal Chylothorax Resistant to Repeated Pleuroamniotic Shunting by OK-432 Pleurodesis

T.K. Lo^a W.L. Lau^a Y.Y. Lam^b M.H.Y. Tang^c T.Y. Leung^d W.C. Leung^a



Fig. 2. Two pleuroamniotic shunts in situ at 29 weeks, with polyhydramnios



Application of transcervical hysterofetoscopy and cord blood collection at first trimester termination of pregnancy for fetal abnormalities

B. C. Chan^{1*}, P. W. Hui¹, W. C. Leung², K. Y. Leung¹, T. C. Pun¹ and C. P. Lee¹

¹*Department of Obstetrics and Gynaecology, Queen Mary Hospital, Hong Kong*

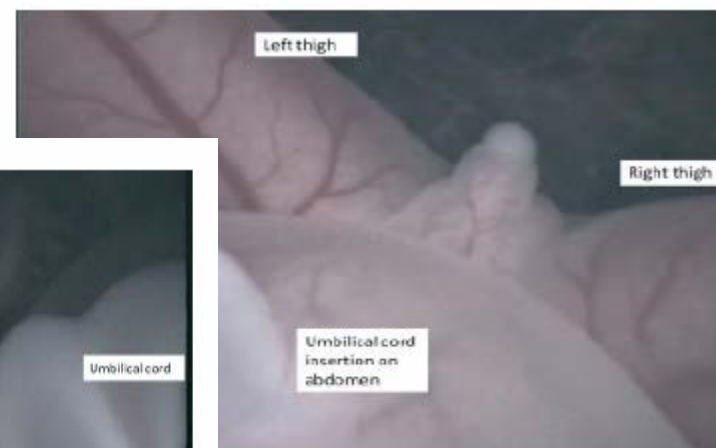
²*Department of Obstetrics and Gynaecology, Kwong Wah Hospital, Hong Kong*



Figure 4—Cord blood collection: hysterofetoscopy guidance cord blood collection near placental cord insertion



Figure 2—Facial feature and left hand: hysterofetoscopic view of fetal face (from right side) at 11 weeks of gestation



genitalia: hysterofetoscopic view

Two cases of postmaturity-related perinatal mortality in non-local expectant mothers

Cherrie Yung 翁惠娟
Kennis Liu 廖雅麗
WL Lau 劉偉霖
Helena Lam 林恩穎
WC Leung 梁永昌
Robert Chin 陳健浩

We present two cases of postmaturity-related perinatal mortality with delivery at 42 weeks 6 days' and 44 weeks' gestation, respectively. No cause beyond postmaturity was found. Neither induction of labour nor foetal monitoring had been performed despite these gestations going post 41 weeks because of a current 'social obstetrics' phenomenon—non-local expectant mothers coming to Hong Kong from mainland China for delivery.

Obstetric cholestasis in Hong Kong—local experience with eight consecutive cases

TK Lo 盧子健

WL Lau 劉偉霖

Helena SW Lam 林思穎

WC Leung 梁永昌

Robert KH Chin 陳健浩

Obstetric cholestasis is associated with maternal morbidity and adverse foetal outcomes. No information on local incidence is available. We present our experience with eight consecutive cases of obstetric cholestasis diagnosed between January 2003 and December 2005 in a regional hospital in Hong Kong. Three patients presented with pruritus without rash, three with impaired liver function, and two with elevated blood pressure postpartum. Meconium-stained liquor was present in five patients and four had spontaneous preterm delivery (between 34 and 36 weeks). The higher the bile acid level, the more marked the prematurity (correlation coefficient, -0.771 ; $P=0.025$). All those presenting with itchiness delivered preterm. Two patients developed pre-eclampsia. The rates of labour induction and abdominal delivery were both 38%. Heightened awareness among clinicians is required to recognise patients with obstetric cholestasis. Affected pregnancies are associated with meconium passage and prematurity. In our locality, affected women may also have an increased risk of pre-eclampsia. In affected women, the bile acid level is useful in assessing the risk of prematurity.

Planned conservative management of placenta accreta - experience of a regional general hospital.

Lo TK¹, Yung WK, Lau WL, Law B, Lau S, Leung WC.

Author information

Abstract

OBJECTIVE: There are only a few series treating ≥ 10 cases of accreta conservatively, all from university teaching hospitals, with reported success rate of 60-85%. We reported the first series of accreta managed by planned uterine conservation in the setting of non-university district general hospital.

METHODS: Women with placenta previa overlying previous cesarean scar who desired uterine conservation were included. For cases with accreta confirmed during cesarean delivery, placenta was purposefully left behind, followed immediately by uterine artery embolization. Cases were followed in our special postnatal clinic. Charts were reviewed to retrieve clinical details.

RESULTS: Among 15 cases of placenta previa overlying cesarean scar opting for conservative management, 12 (80%) were confirmed to be accreta intra-operatively. They had 20-100% of the adherent placentae retained (median 90%) and their uterus preserved. Postpartum, abnormal vaginal bleeding and/or infection led to unscheduled readmission in 67% (8/12), all managed conservatively. Sonographic resolution of placenta took 2-13 months (median 6.6), and was later than menstrual return in 11 cases.

CONCLUSIONS: Successful planned conservative management of placenta accreta is feasible in the setting of district general hospital with facilities for interventional radiology.

Efficacy of birth ball exercises on labour pain management.

Leung RW¹, Li JF, Leung MK, Fung BK, Fung LC, Tai SM, Sing C, Leung WC.

Author information

Abstract

OBJECTIVES: To evaluate the efficacy of a birth ball exercise programme conducted by physiotherapists on pain relief, psychological care, and facilitation of the labour process at a labour ward in a regional hospital.

DESIGN: Case series with before-after comparisons.

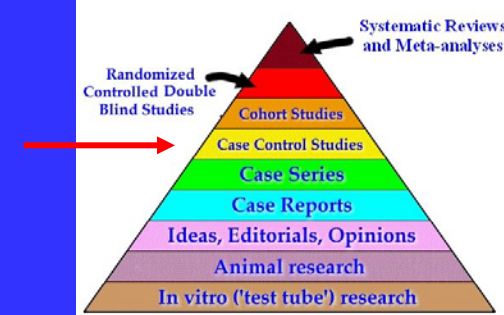
SETTING: Kwong Wah Hospital, Hong Kong.

PARTICIPANTS: Chinese women admitted to the labour ward for spontaneous vaginal delivery between April and August 2012 were recruited. Physiotherapists taught birth ball exercises in groups or individually for 30 minutes. Labour pain intensity, back pain intensity, frequency of labour pain, stress and anxiety levels, and subjective pressure level over the lower abdomen were captured before and after birth ball exercises. Most of the parameters were measured using self-reported visual analogue scales. After the exercise session, physiotherapists measured the women's satisfaction level. Midwives recorded pethidine usage.

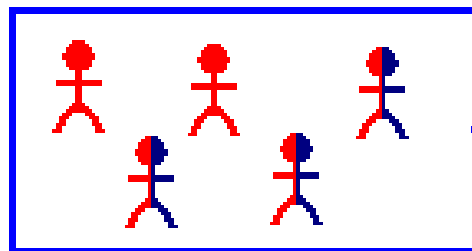
RESULTS: A total of 203 pregnant women participated in this programme; 181 were in the latent phase group, whereas 22 were categorised into the no-labour-pain group. In both groups, there were statistically and clinically significant differences in back pain level, stress and anxiety levels, as well as pressure level over the lower abdomen before and after the exercise ($P < 0.05$). In the latent phase group, significant decreases in labour pain and frequency of labour pain were demonstrated. Mean satisfaction scores were high, with visual analogue scale scores higher than 8.2 in both groups. Pethidine usage showed a further decreasing trend (6.4%) compared with the past 2 years.

CONCLUSION: Birth ball exercise could be an alternative means of relieving back pain and labour pain in the labour ward, and could decrease pethidine consumption in labouring women.

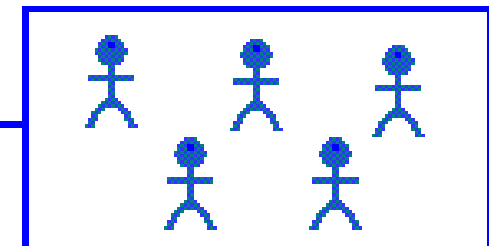
Case Control Studies



Group of interest
(e.g. cancer patients)



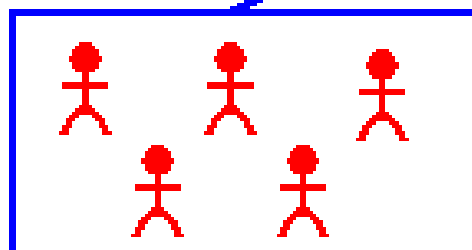
Take histories



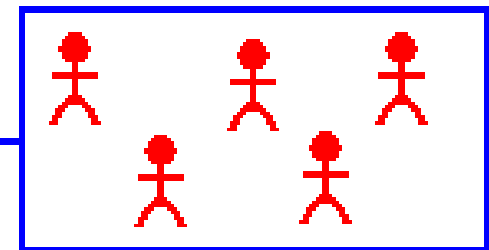
Compare histories

Draw conclusions

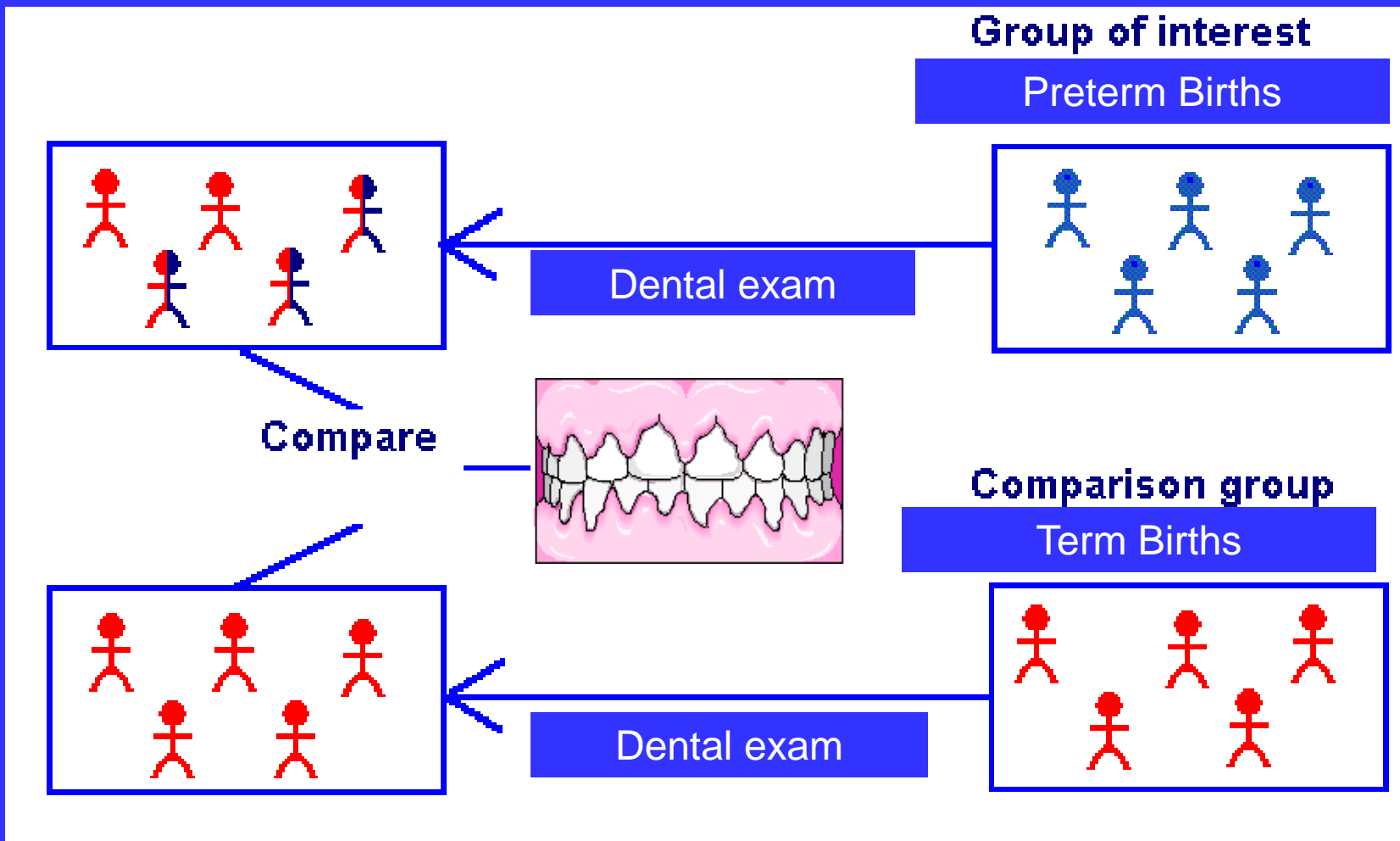
Comparison group
(e.g. non-patients)



Take histories



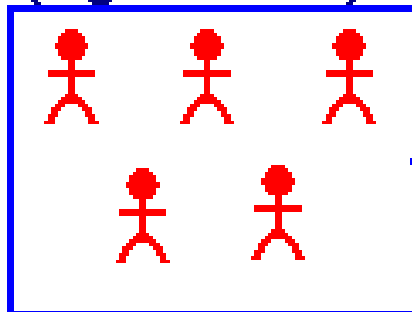
A pilot case-controlled study on the periodontal status in mothers with or without spontaneous preterm births



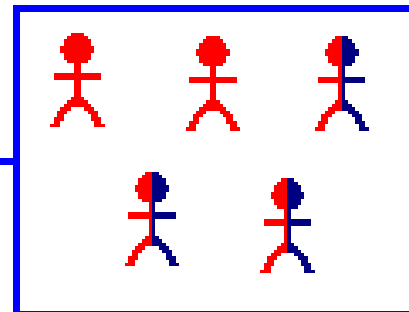
Cohort Studies



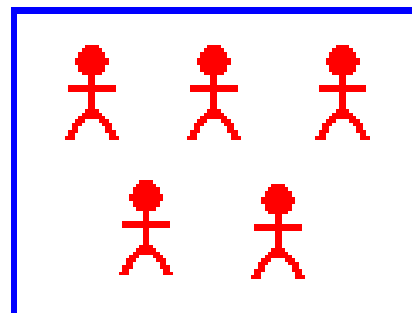
Group of interest
(e.g. smokers)



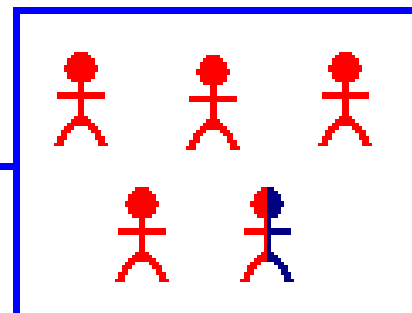
Follow
over time



Comparison group
(e.g. non-smokers)



Follow
over time



Compare
outcomes

Pregnancy outcome following domestic violence in a Chinese community

W.C. Leung*, Y.Y.M. Wong, T.W. Leung, P.C. Ho

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Received 9 May 2000; received in revised form 20 July 2000; accepted 27 July 2000

IJGO 2001

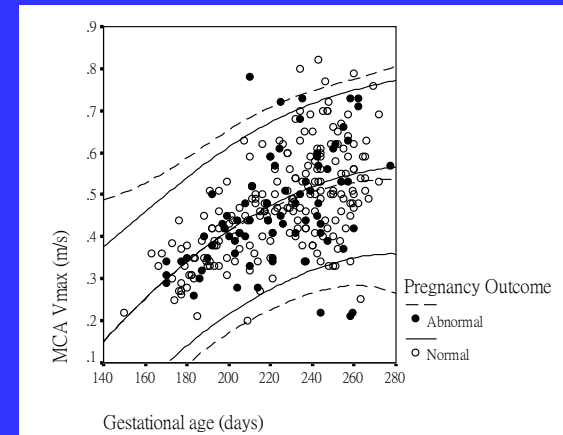
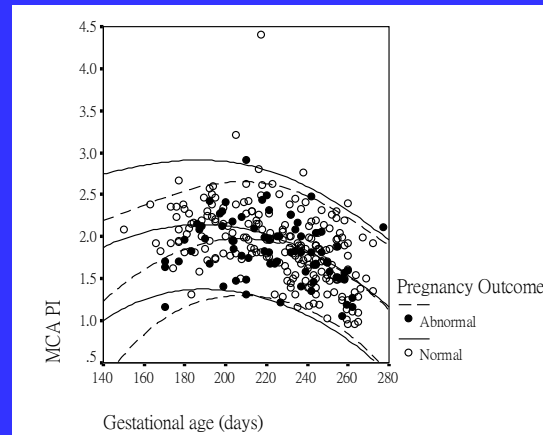
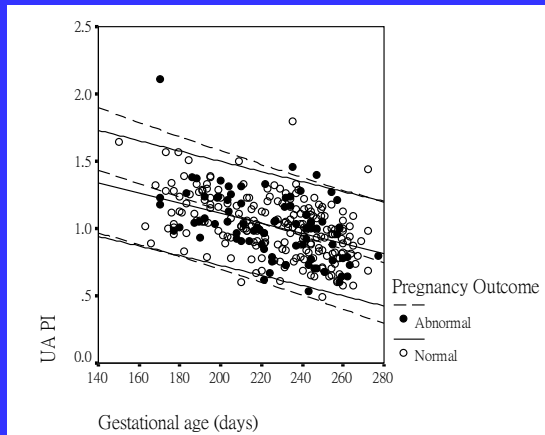
	Abused (n=139)	Non-abused (n=686 ^a)	P
Antenatal complications	3/139 (2%)	21/699 (3%)	0.783
Gestational age at delivery			
<37 weeks	8 (6%)	34 (5%)	0.673
≥37 weeks	131 (94%)	652 (95%)	
Mode of delivery			
NSD	100 (72%)	456 (66%)	0.325
VE/LF	14 (10%)	104 (15%)	
Elective LSCS	4 (3%)	31 (5%)	
Emergency LSCS	21 (15%)	95 (14%)	
Birth weight (g) mean±S.D.	3218±422	3216±423	0.968
Apgar scores mean±S.D.			
1 min	8.8±1.0	8.8±1.1	0.707
5 min	9.8±0.4	9.9±0.4	0.350
Admission to neonatal ICU	1/139 (1%)	7/686 (1%)	1.000



Doppler study of the umbilical and fetal middle cerebral arteries in women with gestational diabetes mellitus

W. C. LEUNG, H. LAM, C. P. LEE and T. T. LAO

Department of Obstetrics and Gynaecology, Queen Mary Hospital, University of Hong Kong, Hong Kong, China



A Prospective Study on the Effect of Rapid Aneuploidy Testing (Amnio-PCR) on Anxiety Levels and Quality of Life Measures in Women and Their Partners with Positive Down Screening Result

W.C. Leung^{a,b} E.T. Lau^b C. Ngai^b H. Lam^{a,b} K.Y. Leung^b C.P. Lee^b T.T. Lao^c
M.H.Y. Tang^b

^aDepartment of Obstetrics and Gynaecology, Kwong Wah Hospital, ^bPrenatal Diagnostic and Counselling Department, Tsan Yuk Hospital, and ^cDepartment of Obstetrics and Gynaecology, Queen Mary Hospital, University of Hong Kong, Hong Kong SAR, China

Fetal Diagnosis
and Therapy

Fetal Diagn Ther 2008;24:165–169
DOI: [10.1159/000151332](https://doi.org/10.1159/000151332)

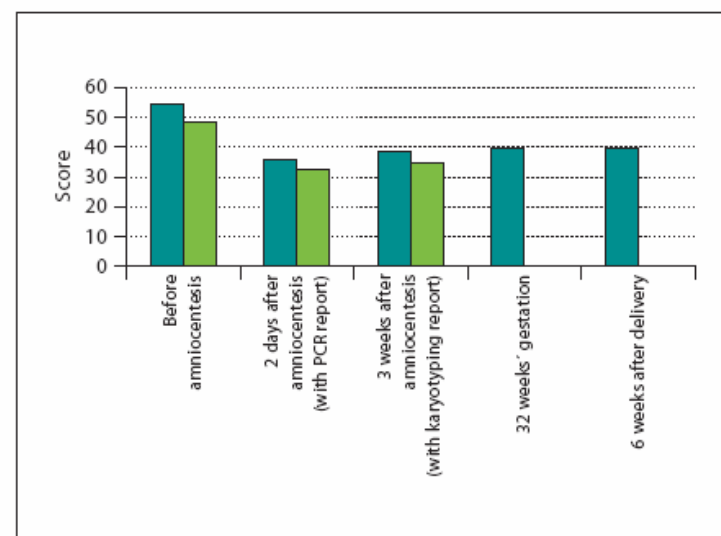


Fig. 1. Mean state-anxiety scores of screen-positive women (n = 39; □; dark green in online edition) and their partners (n = 27; ■; light green in online edition).

Is ultrasound alone enough for prenatal screening of trisomy 18? A single centre experience in 69 cases over 10 years

S. Lai*, W. L. Lau, W. C. Leung, F. K. Lai and R. Chin

Prenatal Diagnosis and Counselling Clinic, Department of Obstetrics and Gynaecology, Kwong Wah Hospital, Kowloon, HKSAR, China

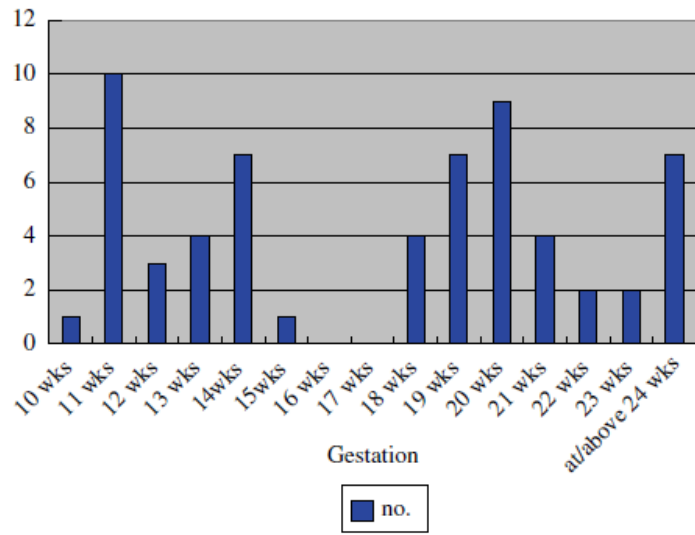
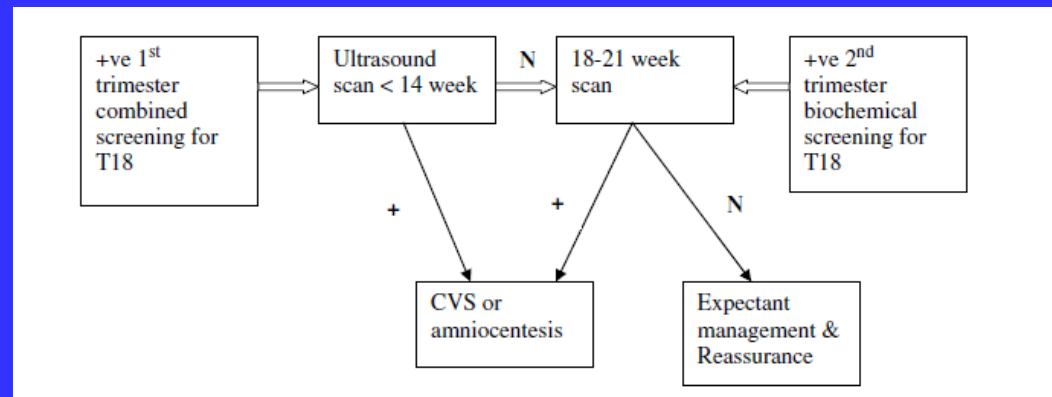


Figure 1—Gestation at which prenatal diagnosis of trisomy 18 was made



Re-emergence of late presentations of fetal haemoglobin Bart's disease in Hong Kong

WY Kwan 關詠恩
CH So 蘇振康
WP Chan 陳運鵬
WC Leung 梁永昌
KM Chow 周鑑明

Objectives To compare early and late presentations of fetal haemoglobin Bart's disease in the Kowloon West Cluster in Hong Kong, and to find reasons for the re-emergence of late presentations.

Design Case series with internal comparisons.

Setting Two tertiary obstetric units in Hong Kong.

Patients All cases with confirmed diagnosis of fetal haemoglobin Bart's disease from 1 January 2000 to 31 December 2009.

Main outcome measures Primary outcome: antenatal care in the current pregnancy. Secondary outcomes: clinical presentations, ultrasound features, and pregnancy outcomes.

New knowledge added by this study

- Re-emergence of late presentations of fetal haemoglobin Bart's disease in Hong Kong after 2003 is related to an influx of obstetric patients who had not undergone proper antenatal screening and diagnosis of thalassaemia.
- Reasons for not making the diagnosis in early pregnancy included: late or no booking at our antenatal services, defaulting of follow-up, improper implementation of screening or diagnostic procedures, and possibility of non-paternity.

O R I G I N A L
A R T I C L E

Predictors of successful outcomes after external cephalic version in singleton term breech pregnancies: a nine-year historical cohort study

LY Cho 曹麗賢

WL Lau 劉偉霖

TK Lo 盧子健

Helen HT Tang 鄧曉彤

WC Leung 梁永昌

-
- Objective** To study the success rate, predictors for success, and pregnancy outcomes after external cephalic version.
- Design** Historical cohort study.
- Setting** Regional hospital, Hong Kong.
- Patients** All women who had singleton term breech pregnancies at term and opted for external cephalic version during 2001 and 2009. Their demographic data, clinical and ultrasound findings, procedure details, complications, and delivery outcomes were analysed.

A Specialised Twin Pregnancy Clinic in a Public Hospital

WK YUNG MBBS, MRCOG, FHKAM (O&G)

AL LIU MBBS, MRCOG

SF LAI MBBS

MT LAM MBBS

HN YEUNG MBBS, MRCOG, FHKAM (O&G)

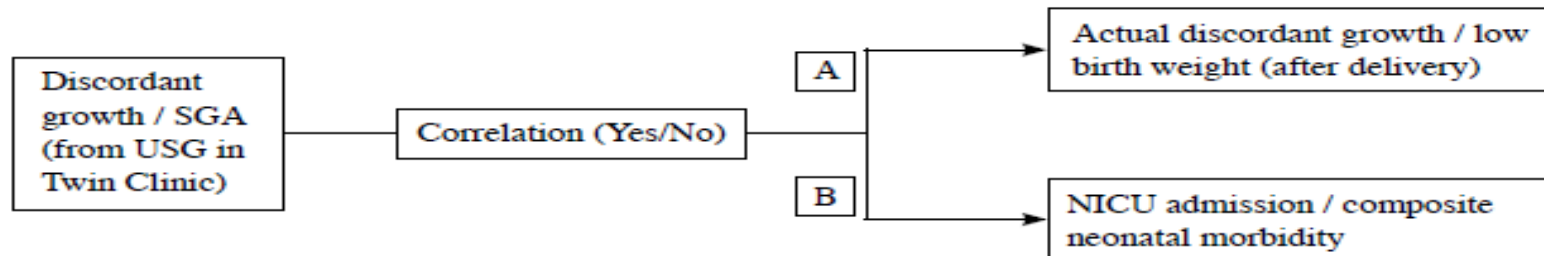
FK LAI BSc (N), MSSc

TK LO MBBS, MRCOG, FHKAM (O&G)

WL LAU MBBS, FRCOG, FHKAM (O&G)

WC LEUNG MBBS, MD, FRCOG, FHKAM (O&G), Cert RCOG (Maternal and Fetal Med)

Department of Obstetrics and Gynaecology, Kwong Wah Hospital, 25 Waterloo Road, Kowloon, Hong Kong



Four possible scenarios	A	B	Implications on Twin Clinic performance
1	Yes	Yes	Useful, as USG correctly predicts growth discordance / LBW and this is the proven high-risk group of adverse neonatal outcome
2	Yes	No	Unlikely to happen in real situation as growth discordance and LBW are the established risk factors for adverse neonatal outcome. Advise to evaluate clinical management of newborn or documentation of neonatal outcome
3	No	Yes	Potentially harmful as unnecessary intervention increases neonatal morbidity (i.e. prematurity)
4	No	No	Not useful

O R I G I N A L
A R T I C L E

Factors influencing the mode of delivery and associated pregnancy outcomes for twins: a retrospective cohort study in a public hospital

AL Liu 廖雅麗
WK Yung 翁惠娟
HN Yeung 楊香娜
SF Lai 賴瑞芬
MT Lam 林美停
FK Lai 賴鳳琼
TK Lo 盧子健
WL Lau 劉偉霖
WC Leung 梁永昌

Objectives To determine current trends for different modes of delivery in twin pregnancies, factors affecting the mode of delivery, and associated outcomes.

Design Retrospective cohort study.

Setting A public hospital in Hong Kong.

Participants All twin pregnancies booked at Kwong Wah Hospital during a 3-year period from 1 April 2006 to 31 March 2009.

Results Of 107 sets of twins, 25 (18%) were delivered vaginally and 162

Twin pregnancy outcomes after increasing rate of vaginal twin delivery: retrospective cohort study in a Hong Kong regional obstetric unit.

Tang HT¹, Liu AL¹, Chan SY¹, Lau CH¹, Yung WK¹, Lau WL¹, Leung WC¹.

⊕ Author information

Abstract

OBJECTIVE: To determine any change in adverse neonatal/maternal outcomes after increasing the rate of vaginal twin delivery by comparing vaginal twin delivery and caesarean delivery with our previous cohort study.

METHODS: In a retrospective cohort study, all twins booked at a Hong Kong regional obstetrics unit were evaluated during a 3-year period from 1 April 2009 to 31 March 2012.

RESULTS: Out of the 269 sets of twins who eventually delivered in our unit, 68 (25.3%) of them were delivered vaginally, compared to 15.8% in our previous cohort study ($p = 0.02$). For those who were suitable for vaginal delivery, significantly more women attempted vaginal delivery: 93/133 (69.9%) versus 47/100 (47%) ($p = 0.0005$). The success rate for vaginal delivery and rate of requiring caesarean delivery for the 2nd twin were similar between these two periods. There were significantly more 2nd twins with cord blood pH < 7.2 when both twins were delivered by vaginal delivery. Otherwise, there was no significant difference between other neonatal/maternal morbidities.

CONCLUSION: With proper counseling, significantly more women who were suitable for vaginal twin delivery would opt to do so. There was no significant increase in neonatal/maternal morbidities despite the increased rate of vaginal twin delivery.

Indications for and pregnancy outcomes of cervical cerclage: 11-year comparison of patients undergoing history-indicated, ultrasound-indicated, or rescue cerclage.

Chan LL¹, Leung TW¹, Lo TK², Lau WL¹, Leung WC¹.

Author information

Abstract

OBJECTIVES: To review and compare pregnancy outcomes of patients undergoing history-indicated, ultrasound-indicated, or rescue cerclage.

DESIGN: Case series with internal comparison.

SETTING: A regional obstetric unit in Hong Kong.

PATIENTS: Women undergoing cervical cerclage at Kwong Wah Hospital between 1 January 2001 and 31 December 2011.

INTERVENTIONS: Cervical cerclage.

MAIN OUTCOME MEASURES: Pregnancy outcomes including miscarriage, gestational age at delivery, birth weight, and duration of pregnancy prolongation.

RESULTS: Overall, 47 patients were included. Nine (19.1%) pregnancies resulted in miscarriage. The median gestational age at delivery was 35.7 weeks. Among the 23 patients who had history-indicated cerclage, only four (17.4%) had three or more previous second-trimester miscarriages or preterm deliveries. Among the 15 patients who had ultrasound-indicated cerclage, preoperative cervical length of ≤ 1.5 cm was associated with shorter prolongation of pregnancy, compared with that of > 1.5 cm (median, 12.1 vs 18.4 weeks; $P=0.009$). Among the nine women who had rescue cerclage, those who underwent the procedure before 20 weeks of gestation delivered earlier than those underwent cerclage later (median, 22.5 vs 34.1 weeks; $P=0.048$).

CONCLUSIONS: Patients eligible for the Royal College of Obstetricians and Gynaecologists-recommended history-indicated cerclage remain few. The majority of patients may benefit from serial ultrasound monitoring of cervical length with or without ultrasound-indicated cerclage.

Social obstetrics: non-local expectant mothers admitted through accident and emergency department in a public hospital in Hong Kong.

Yung WK¹, Hui W¹, Chan YT¹, Lo TK¹, Tai SM¹, Sing C¹, Lam YY², Lo CM³, Lau WL¹, Leung WC¹.

⊕ Author information

Abstract

OBJECTIVES: To review the pregnancy outcomes of non-booked, non-local pregnant women delivering in Kwong Wah Hospital via admission to the Accident and Emergency Department 1 year after the announcement by the Hospital Authority to stop antenatal booking for non-eligible persons; and to perform a literature review of local studies about non-eligible person deliveries over the last decade.

DESIGN: Case series.

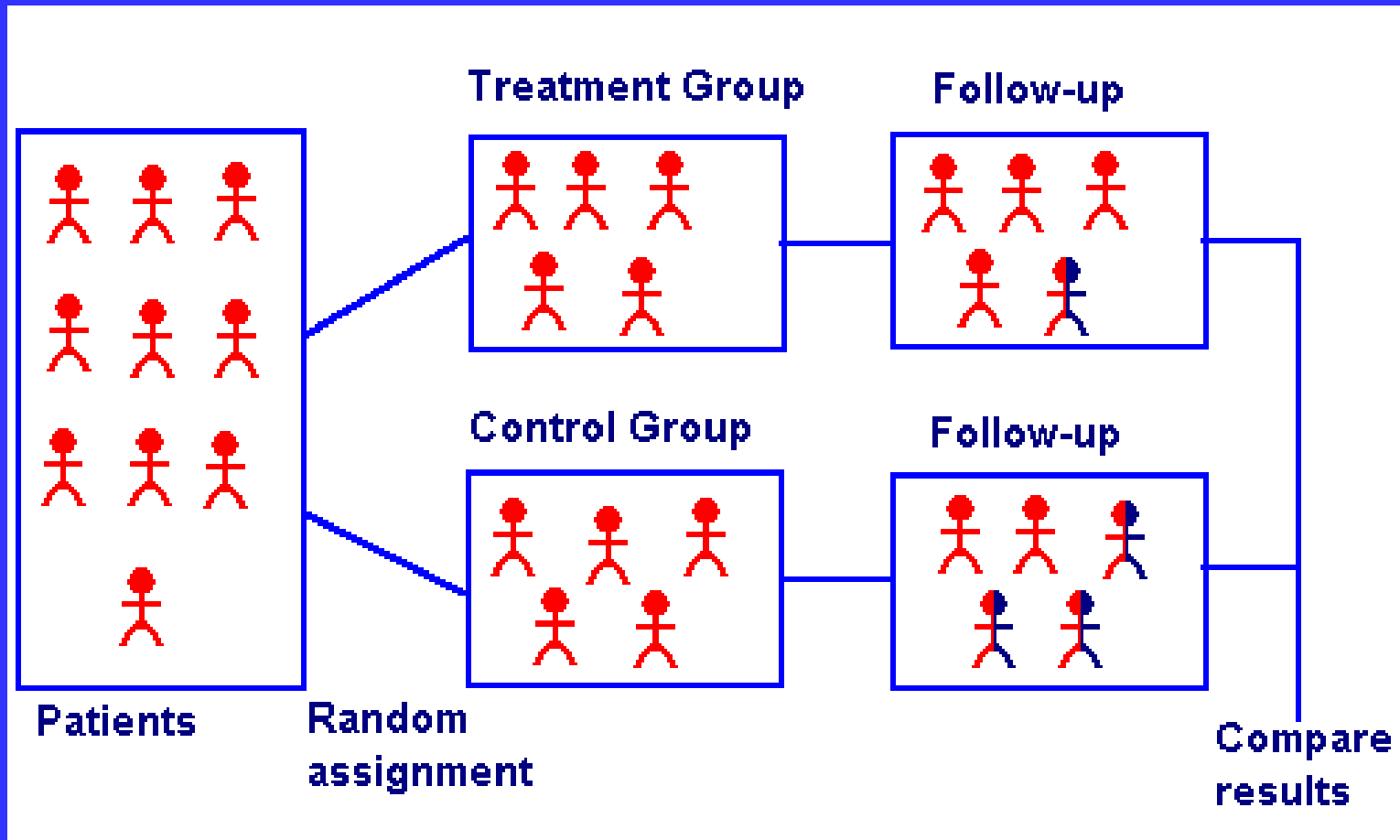
SETTING: A public hospital in Hong Kong.

PARTICIPANTS: All women who held the People's Republic of China passport or the two-way permit and those non-eligible persons whose spouses were Hong Kong Identity Card holders, who delivered in Kwong Wah Hospital from 1 April 2011 to 31 March 2012.

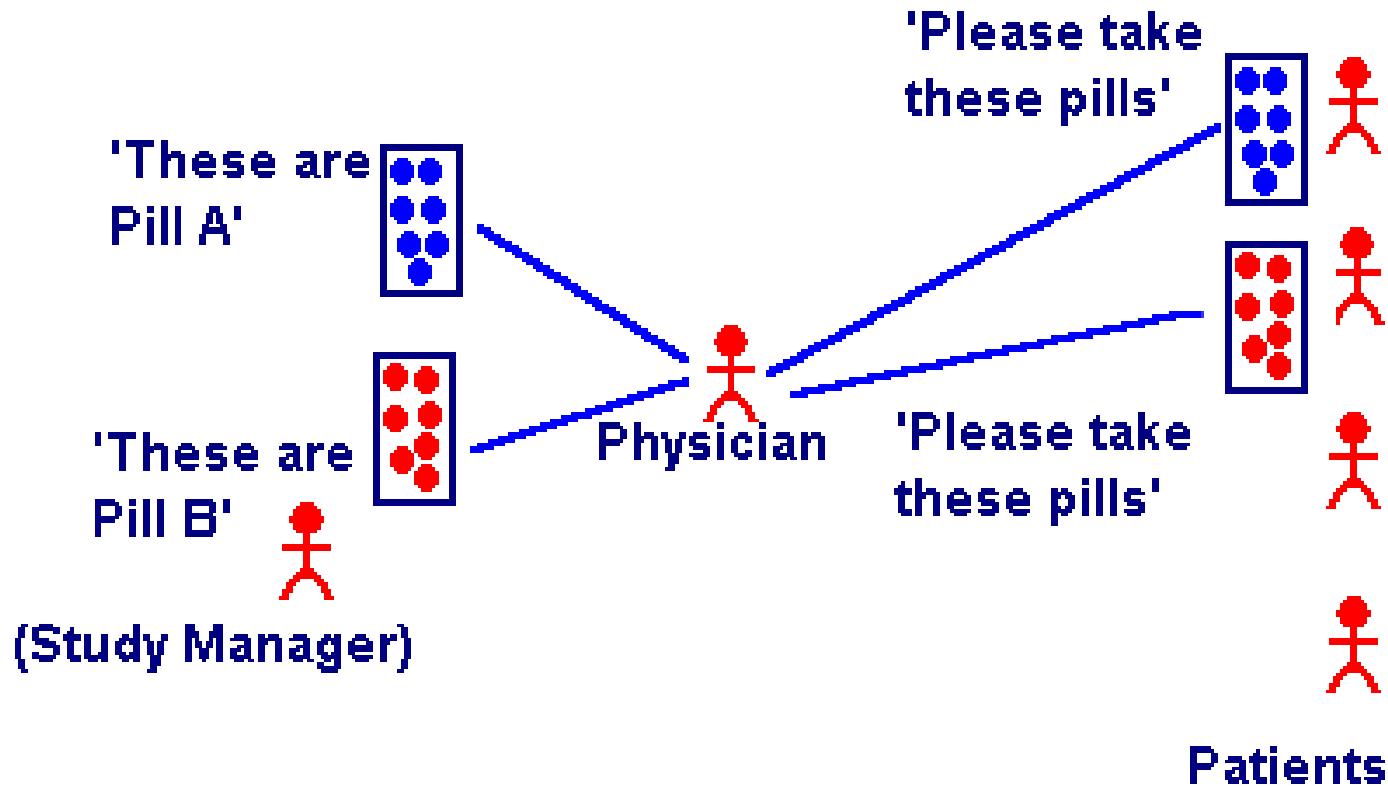
RESULTS: Overall, 219 women who were non-eligible persons delivered 221 live births during the study period. Compared with the annual statistics of Kwong Wah Hospital in 2011, non-local mothers were of higher parity; more likely to have hypertensive disease (including pre-eclamptic toxemia), preterm deliveries (ie at <37 weeks), babies needing admission to the special care baby unit, and macrosomic babies (ie weighing >4.0 kg). The rates of induction of labour and caesarean section were lower in this group. There was no significant difference in the maternal and neonatal outcomes between women who had no booking and those who had a booking in another Hospital Authority or private hospital. There were many incidents of near-miss obstetric complications or suboptimally managed obstetric conditions due to lack of well-structured and continuous antenatal care in this group of non-eligible persons.

CONCLUSION: Non-eligible person delivering babies in Hong Kong has become a social obstetrics phenomenon. Despite the introduction of policies, reduction in the number of deliveries (quantity) did not improve the obstetric outcomes (quality). Health care professionals should continue to be prepared for managing the potential near-miss clinical complications in this group of 'travelling

Randomized Controlled Studies



The Double Blind Method



The effect of fast reporting by amnio-PCR on anxiety levels in women with positive biochemical screening for Down syndrome — a randomized controlled trial

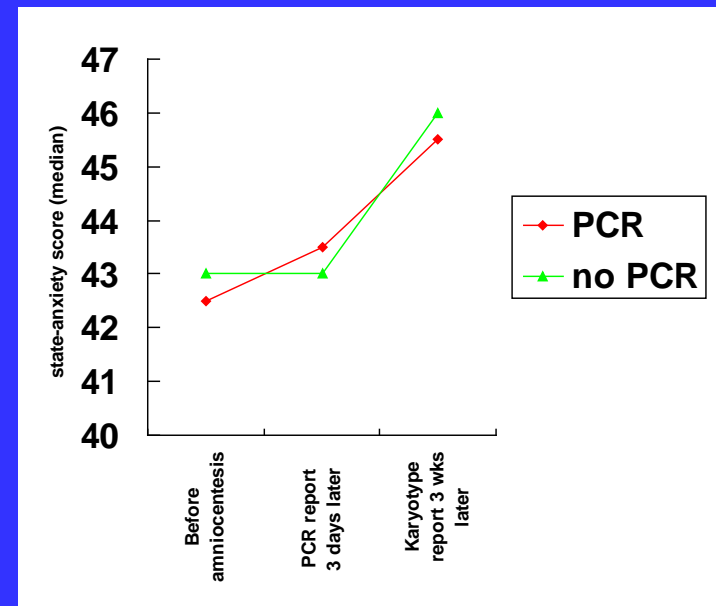
Wing Cheong Leung^{1*}, Yung Hang Lam¹, Ying Wong¹, Elizabeth T. Lau² and Mary Hoi Yin Tang¹

¹Department of Obstetrics and Gynaecology, Tsan Yuk Hospital, University of Hong Kong, Hong Kong, China

²Prenatal Diagnostic and Counselling Department, Tsan Yuk Hospital, Hong Kong, China



Prenat Diagn 2002



A randomised controlled trial of empowerment training for Chinese abused pregnant women in Hong Kong

A. Tiwari,^a W.C. Leung,^b T.W. Leung,^b J. Humphreys,^c B. Parker,^d P.C. Ho^b

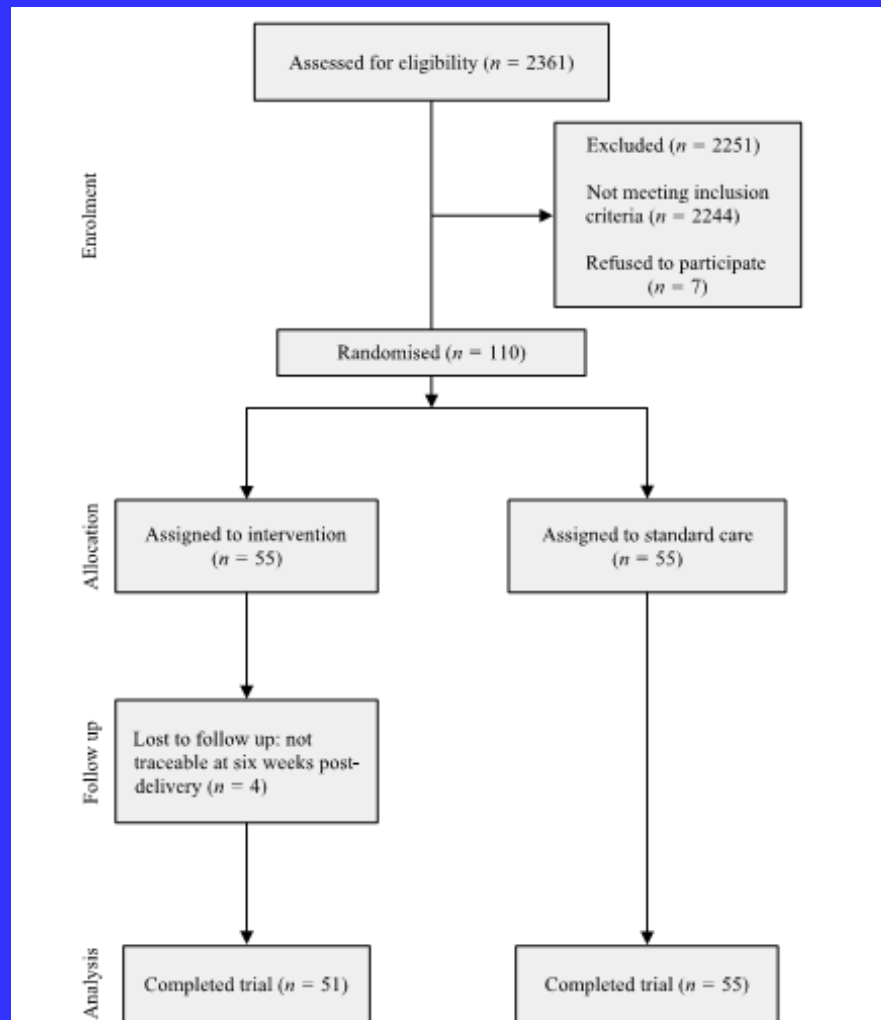
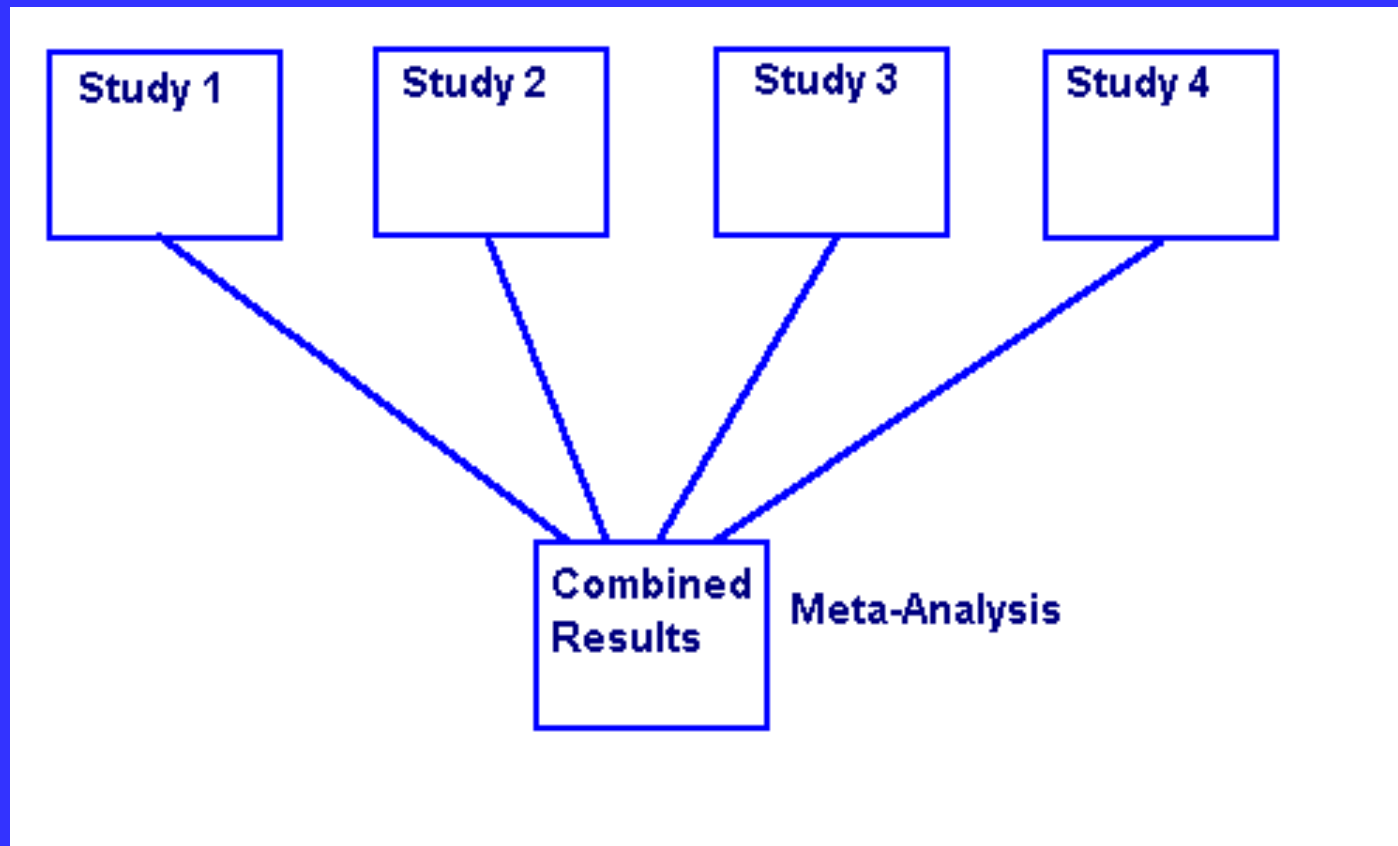


Fig. 1. Flow diagram of the progress through the phases of a randomised controlled trial.



Systematic Reviews and Meta-Analyses



<http://www.consort-statement.org/QUOROM.pdf>

<http://www.consort-statement.org/Initiatives/MOOSE/moose.pdf>

Rapid aneuploidy testing, traditional karyotyping, or both?



Study	Location	Total	Concordant normal	Concordant abnormal	Discordant (false negative)		Discordant (false positive)
					S	NS	
Evans et al, 1999 ^{a*}	USA, Sweden, UK, Switzerland	146 128	141 965 (97.2)	2889 (2.0)	1274 (0.9)†	..	0
Thilaganathan et al, 2000 ³	UK	3200	3088 (96.5)	93 (2.9)	5 (0.2)	13 (0.4)	1 (0.03)
Thein et al, 2000 ^{a*}	UK	1687	1576 (93.4)	97 (5.7)	7 (0.4)	7 (0.4)	0
Lewin et al, 2000 ^{a*}	France	27 407	26 268 (95.8)	818 (3.0)	99 (0.4)	222 (0.8)	0
Ryall et al, 2001 ⁶	Australia	3380	3251 (96.2)	104 (3.1)	6 (0.2)	19 (0.6)	0
Leung et al, 2001 ⁷	Canada	294	234 (79.6)	50 (17.0)	9 (3.1)	1 (0.3)	0
Witters et al, 2002 ²	Belgium	5036	4853 (96.4)	125 (2.5)	9 (0.2)	49 (1.0)	0
Leung et al, 2003 ⁹	China (HKSAR)	1526	1461 (95.7)	61 (4.0)	2 (0.1)	2 (0.1)	0
Homer et al, 2003 ¹⁰	USA	21 609	20 860 (96.5)	524 (2.4)	145 (0.7)	80 (0.4)	0
Grimshaw et al, 2003 ¹¹	UK	3764	3666 (97.4)	86 (2.3)	12 (0.3)†	..	0
Leung et al, 2004 ⁸	UK	1548	1466 (94.7)	60 (3.9)	13 (0.8)	9 (0.6)	0
Cirigliano et al, 2004 ¹²	Spain, Italy	17 917	17 129 (95.6)	732 (4.1)	56 (0.3)†	..	0
Total		233 496	225 817 (96.7)	5639 (2.4)	2039 (0.9)†	..	1 (0.00)
Total of S or NS					295 (0.4)	402 (0.6)	

*FISH or PCR assumed to have been performed. †Only one value given for false-negative cases not separated into S or NS. Results expressed as number (%). S=clinically significant, NS=clinically not significant.

Table: Reports of rapid aneuploidy testing (FISH or PCR) and traditional karyotyping

*W C Leung, T T Lao

Division of Maternal Fetal Medicine, Department of Obstetrics and Gynaecology, Queen Mary Hospital, University of Hong Kong, HKSAR, China

Lancet 2005

Epidemiology



Epidemiology is the study of factors affecting the health and of populations, and serves as the foundation and logic of interventions made in the interest of public health and preventive medicine. It is considered a cornerstone methodology of public health research, and is highly regarded in evidence-based medicine for identifying risk factors for disease and determining optimal treatment approaches to clinical practice.

Maternal hepatitis B infection and gestational diabetes mellitus[☆]

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Ka-Yu Tse^{1,3}

¹Department of Obstetrics and Gynaecology, The University of Hong Kong, Hong Kong, China

²Research Centre of Heart, Brain, Hormone and Healthy Aging, The University of Hong Kong, Hong Kong, China

³Department of Obstetrics and Gynaecology, Queen Mary Hospital, Pokfulam Road, Hong Kong, China

Background/Aims: This retrospective cohort study was performed to examine the relationship between maternal hepatitis B virus infection, as indicated by the surface antigen status, with the development of gestational diabetes mellitus in a normal-risk Chinese obstetric population.

Methods: Maternal demographics, risk factors, and pregnancy outcome of 13,683 singleton pregnancies delivering in 1998–2001 were analysed according to maternal hepatitis B surface antigen status, which was routinely screened. Multiple logistic regression analysis was performed to examine the role of hepatitis B infection in the development of gestational diabetes mellitus.

Results: The 1138 women (8.3%) with hepatitis B infection had lower mean weight and body mass index, similar prevalence of chronic medical diseases and smokers, but increased prevalence of gestational diabetes mellitus, which remained significant (odds ratio 1.24, 95% confidence interval 1.01–1.51) after adjustment for confounding variables. However, there was no difference in pregnancy outcome.

Conclusions: Our results confirmed the independent association between hepatitis B infection with gestational diabetes mellitus. The magnitude of chronic hepatitis B infection in the developing world and certain ethnic groups could have contributed to the high prevalence of gestational and possibly type 2 diabetes in these populations. Further studies on the long-term implications of our finding are warranted.

Recent dramatic increase in the male-to-female sex ratio of babies born in Hong Kong

Wong Ying Grace^{1,*}, Leung Wing Cheong² and Chin Kien Howe Robert³

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² Department of Obstetrics and Gynecology, Kwong Wah Hospital, Kowloon, Hong Kong

³ Department of Obstetrics and Gynecology, Kowloon West Cluster, Hospital Authority, Hong Kong

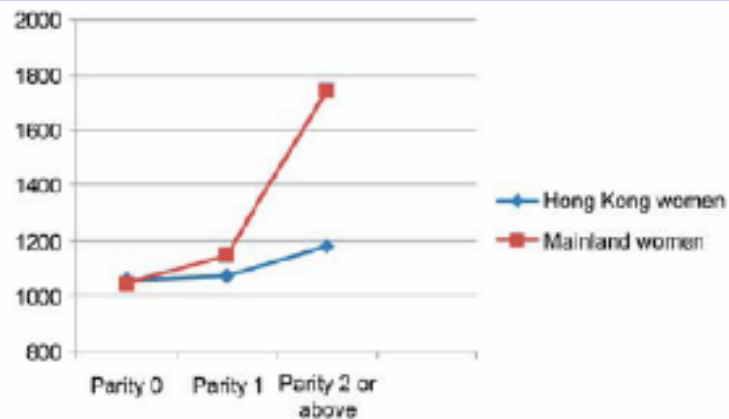
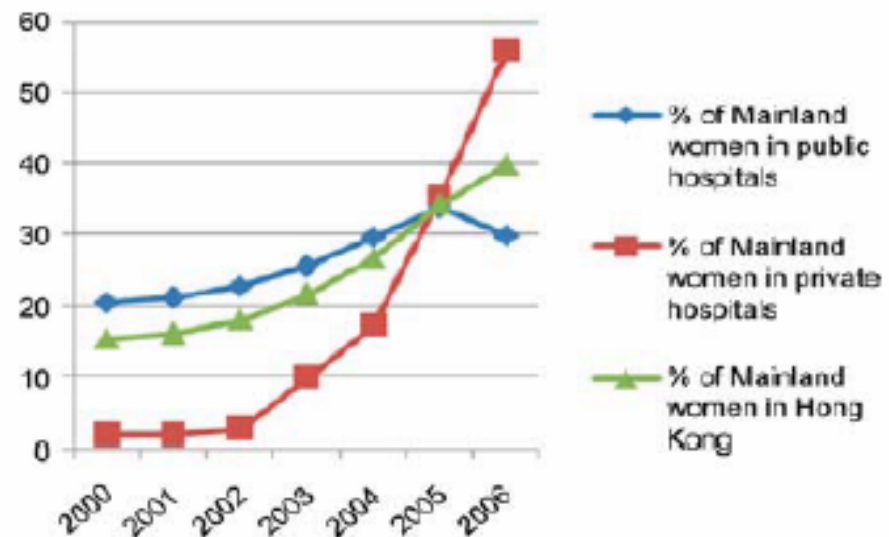


Figure 3 Sex ratio at birth for Hong Kong women and Mainland Chinese women adjusted for parity.

Surveys



- **Statistical surveys are used to collect quantitative information about items in a population. Surveys of human populations and institutions are common in political polling and government, health, social science and marketing research. A survey may focus on opinions or factual information depending on its purpose, and many surveys involve administering questions to individuals. When the questions are administered by a researcher, the survey is called a structured interview or a researcher-administered survey. When the questions are administered by the respondent, the survey is referred to as a questionnaire or a self-administered survey.**

Surveys

ORIGINAL ARTICLE

RPW Kwok 郭佩璋
YK Law 羅婉琪
KE Li 李君婷
YC Ng 伍裕川
MH Cheung 張文康
VKP Fung 馮啟邦
KTT Kwok 郭子迪
JMK Tong 湯文傑
PF Yen 嚴鵬飛
WC Leung 梁永昌

Prevalence of workplace violence against nurses in Hong Kong

護士於工作場所內面對暴力的比率

.....

Objectives. To determine the prevalence and nature of workplace violence against nurses, and how nurses deal with such aggression; and to identify the risk factors related to violence in the hospital environment.

Design. Cross-sectional questionnaire study.

Setting. University teaching hospital, Hong Kong.

Participants. All nursing staff in the hospital, except nurses who were unable to read Chinese or who did not have patient contact (eg those worked in administrative positions), were invited to complete a questionnaire.

Main outcome measures. Demographic data of the respondents, incidence of and risk factors contributing to workplace violence.

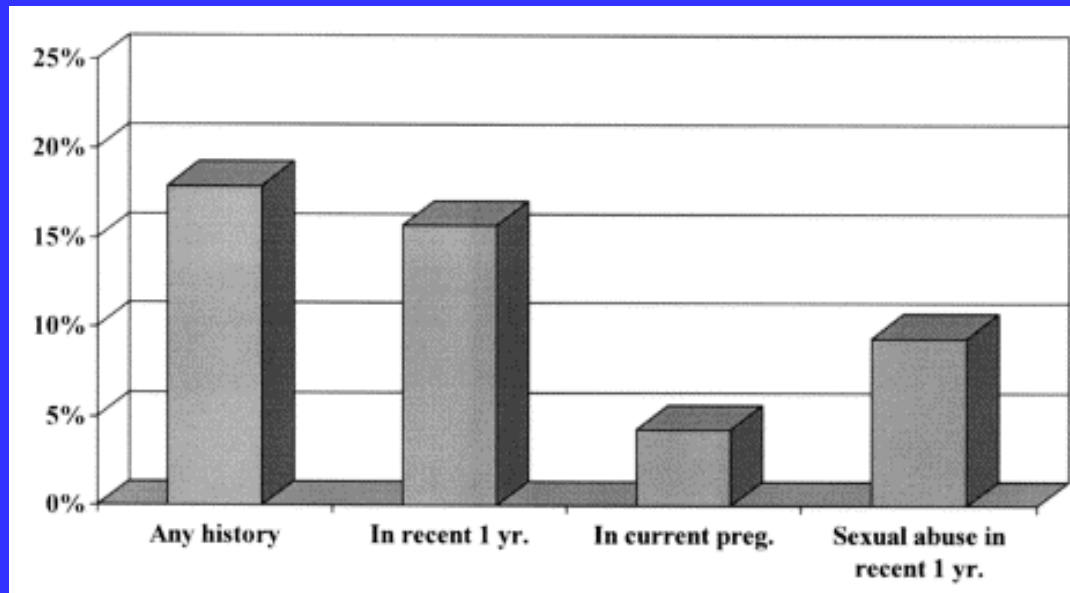
Surveys

The prevalence of domestic violence against pregnant women in a Chinese community

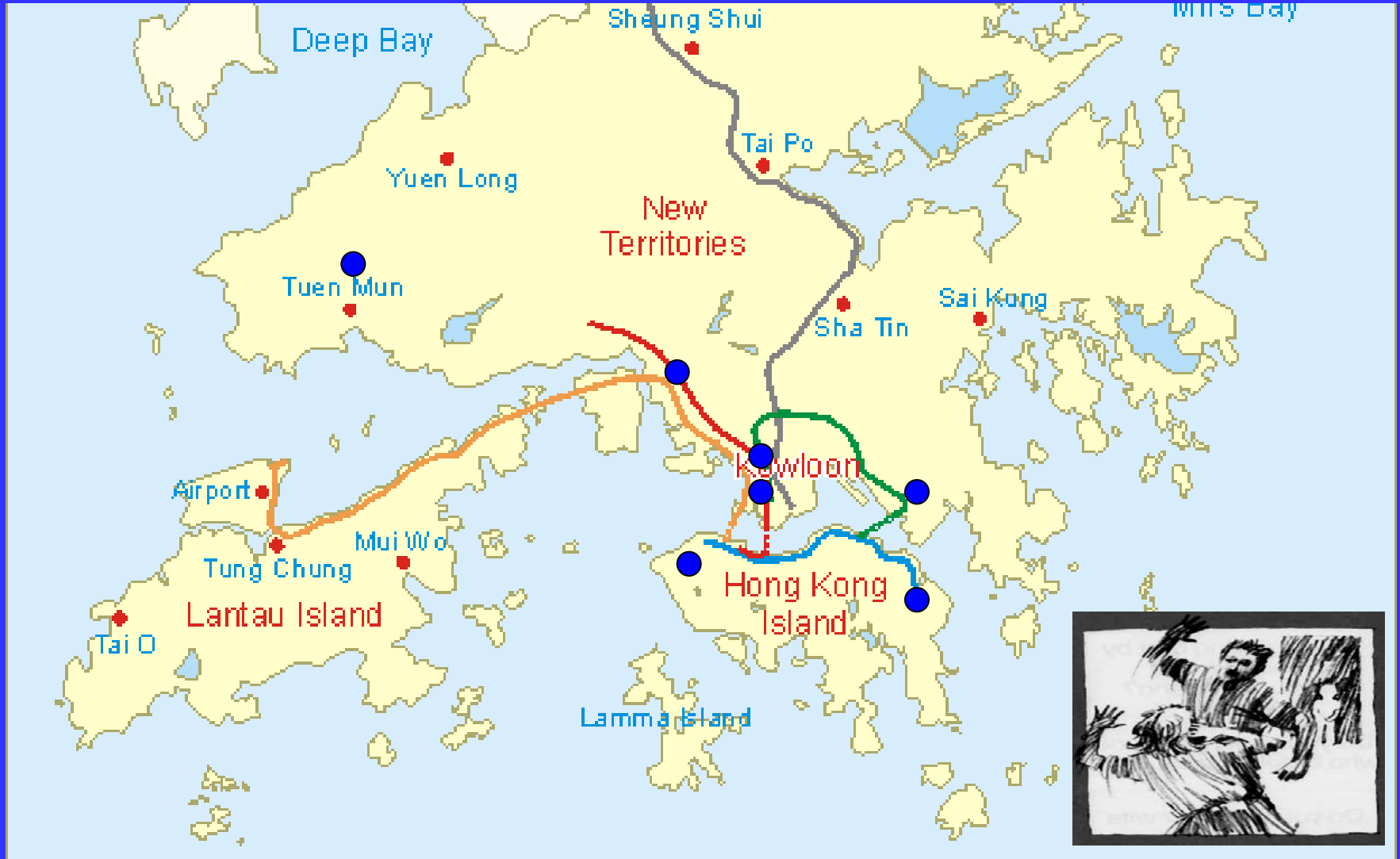
IJGO 1999

W.C. Leung*, T.W. Leung, Y.Y.J. Lam, P.C. Ho

Department of Obstetrics and Gynaecology, The University of Hong Kong, Tsan Yuk Hospital, Hospital Road, Hong Kong, China



The prevalence of intimate partner violence among pregnant women: a territory-wide survey in HK 2006



The impact of psychological abuse by an intimate partner on the mental health of pregnant women

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Identifying intimate partner violence: comparing the Chinese abuse assessment screen with the Chinese revised conflict tactics scales

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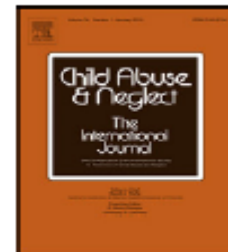
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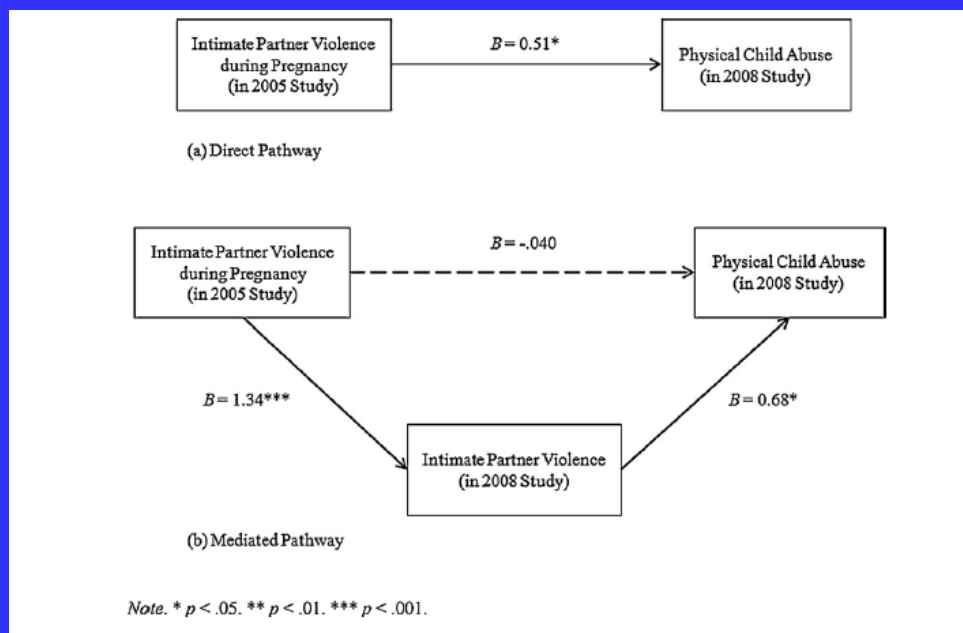
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Child Abuse & Neglect



Violence against pregnant women can increase the risk of child abuse: A longitudinal study[☆]

Ko Ling Chan^{a,*}, Douglas A. Brownridge^b, Daniel Y.T. Fong^c, Agnes Tiwari^c, Wing Cheong Leung^d, Pak Chung Ho^e



[Sci Rep.](#) 2015 Jun 19;5:11420. doi: 10.1038/srep11420.

Validation of the Drug Abuse Screening Test (DAST-10): A study on illicit drug use among Chinese pregnant women.

[Lam LP¹](#), [Leung WC²](#), [Ip P³](#), [Chow CB⁴](#), [Chan MF¹](#), [Ng JW¹](#), [Sing C²](#), [Lam YH⁵](#), [Mak WL⁵](#), [Chow KM¹](#), [Chin RK²](#).

Author information

Abstract

We assessed the Chinese version of the Drug Abuse Screening Test (DAST-10) for identifying illicit drug use during pregnancy among Chinese population. Chinese pregnant women attending their first antenatal visit or their first unbooked visit to the maternity ward were recruited during a 4-month study period in 2011. The participants completed self-administered questionnaires on demographic information, a single question on illicit drug use during pregnancy and the DAST-10. Urine samples screened positive by the urine Point-of-Care Test were confirmed by gas chromatography-mass spectrometry. DAST-10 performance was compared with three different gold standards: urinalysis, self-reported drug use, and evidence of drug use by urinalysis or self-report. 1214 Chinese pregnant women participated in the study and 1085 complete DAST-10 forms were collected. Women who had used illicit drugs had significantly different DAST-10 scores than those who had not. The sensitivity of DAST-10 for identify illicit drug use in pregnant women ranged from 79.2% to 33.3% and specificity ranged from 67.7% to 99.7% using cut-off scores from ≥ 1 to ≥ 3 . The ~ 80% sensitivity of DAST-10 using a cut-off score of ≥ 1 should be sufficient for screening of illicit drug use in Chinese pregnant women, but validation tests for drug use are needed.

Factors influencing the career interest of medical graduates in obstetrics and gynaecology in Hong Kong: a cross-sectional questionnaire survey

Christy YY Lam ^{*}, Charleen SY Cheung, Annie SY Hui

ABSTRACT

Introduction: The trend of declining interest of medical graduates in pursuing obstetrics and gynaecology as a career has been observed in many overseas studies. This study aimed to evaluate the career interest of the most recent medical graduates in Hong Kong, especially their level of interest in obstetrics and gynaecology, and to identify key influential factors for career choice and career interest in obstetrics and gynaecology.

Methods: All medical graduates from the Chinese University of Hong Kong and the University of Hong Kong who attended the pre-internship lectures in June 2015 were invited to participate in this cross-sectional questionnaire survey. The main outcome measures were the level of career interest in obstetrics and gynaecology, the first three choices of specialty as a career, key influential factors for career choice, and key influential factors for career interest in obstetrics and gynaecology.

Results: Overall, 73.7% of 323 new medical graduates participated and 233 questionnaires were analysed. The median score (out of 10) for the level of career interest in obstetrics and gynaecology was 3. There were 37 (16.2%) participants in whom obstetrics and gynaecology was among their first three choices, of whom 29 (78.4%) were female. Obstetrics and

career choice. By factor analysis, the strongest key influential factor for career interest in obstetrics and gynaecology was clerkship experience (variance explained 28.9%) and the strongest key influential factor for career choice was working style (variance explained 26.4%).

Conclusions: The study confirmed a low level of career interest in obstetrics and gynaecology among medical graduates and a decreasing popularity of the specialty as a career choice. The three key influential factors for career interest in obstetrics and gynaecology and career choice were working style, clerkship experience, and career prospects.

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Clinical Audit

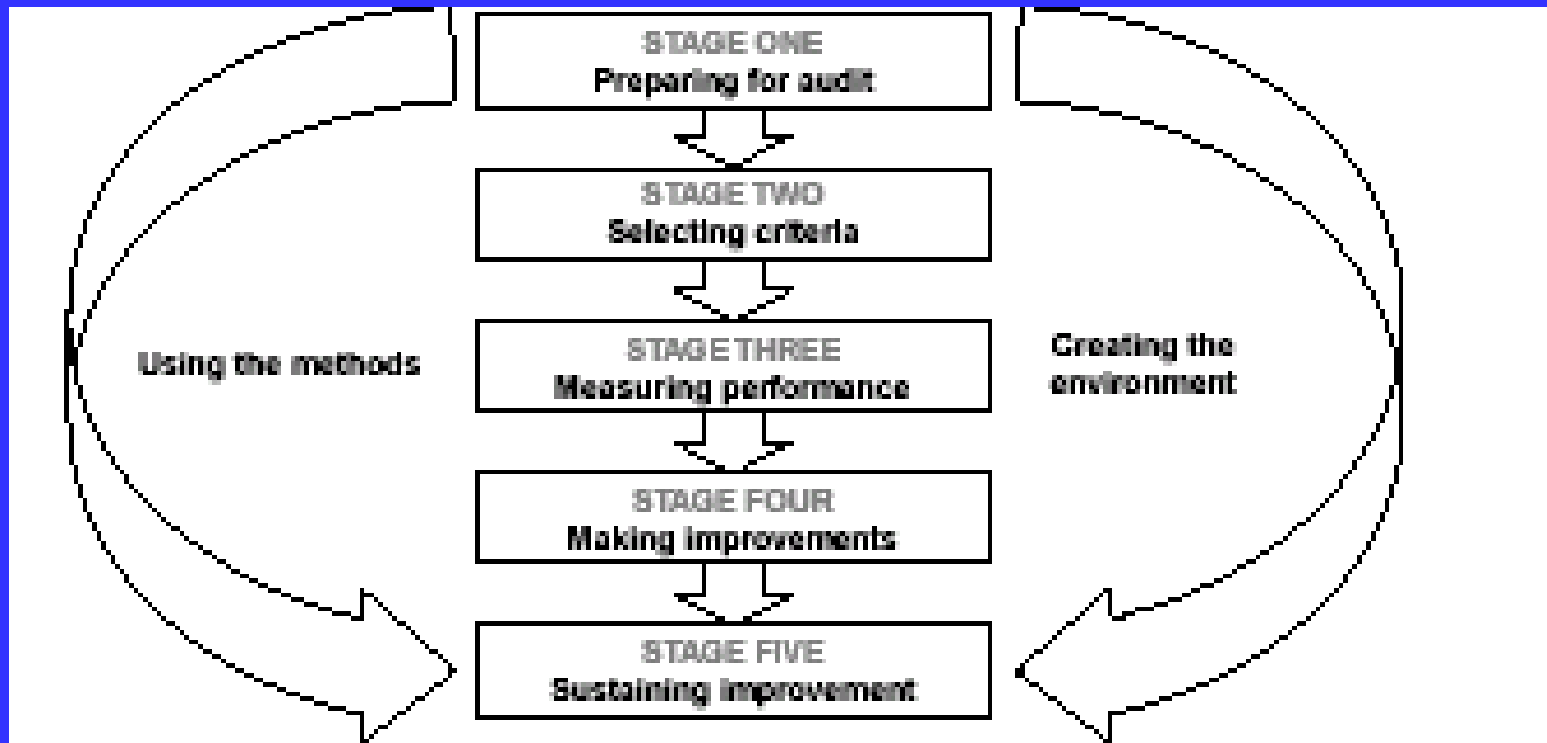


Figure 2. The stages of clinical audit. Clinical audit involves the use of specific methods, but also requires the creation of a supportive environment.

Audit Cycles



Figure 1. The Clinical audit cycle

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Unexpected reduction in the incidence of birth trauma and birth asphyxia related to instrumental deliveries during the study period: was this the Hawthorne effect?

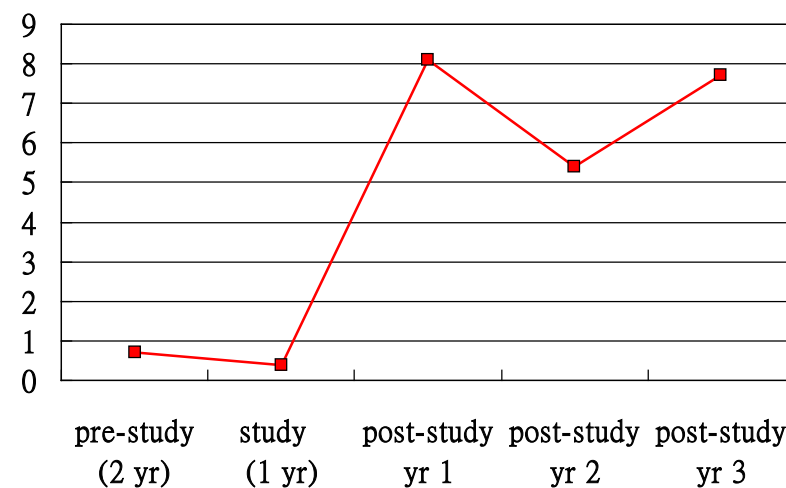
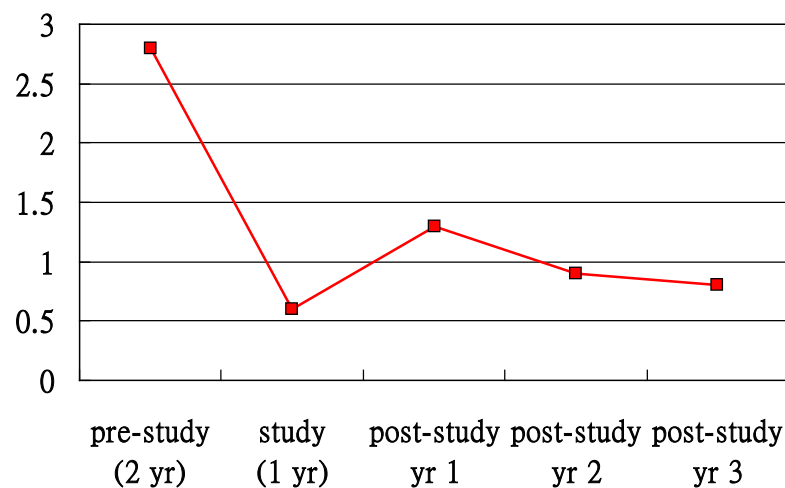
W.C. Leung*, H.S.W. Lam, K.W. Lam, M. To, C.P. Lee



The original Hawthorne Studies 1924-32

Continued reduction in the incidence of birth trauma and birth asphyxia related to instrumental deliveries after the study period: Was this the Hawthorne effect?

W.C. Leung^{*}, B.C.P. Chan, G. Ma, K.W. Lam, K.Y. Leung,
T.C. Pun, T.T. Lao, C.P. Lee



The effect of gestational age on the outcome of second-trimester termination of pregnancies for foetal abnormalities

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Table 2—Relationship between incomplete abortion and gestation at termination

Gestation (wks)	Retained product		OR ^a (95% CI)	P
	No	Yes		
>20	98 (75%)	33 (25%)	1.00	—
17–20	64 (69%)	29 (31%)	1.54 (0.80–2.97)	0.196
<17	32 (57%)	24 (43%)	2.21 (1.07–4.61)	0.032

Results were presented as number (percentage).

^a Adjusted for age, parity, BMI and dose of misoprostol.

Effect of fetal diagnosis on the outcomes of second-trimester pregnancy termination for fetal abnormalities: A pilot study

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Table III. Relationship between retained product and fetal diagnosis.

Fetal diagnosis	Retained product		OR* (95% CI)	<i>p</i>
	No	Yes		
Hb Barts	18 (64%)	10 (36%)	–	–
Trisomy 21	36 (58%)	26 (42%)	5.25 (1.24–22.19)	0.024
Trisomy 18	23 (77%)	7 (23%)	0.74 (0.16–3.60)	0.711

Results are presented as number (percentage). Hb Barts, hemoglobin Barts; OR, odds ratio; CI, confidence interval. *Adjusted for maternal age, parity, body mass index, history of cesarean delivery, gestation, and fetal hydrops on logistic regression.

A new policy for prenatal screening and diagnosis of Down syndrome for pregnant women with advanced maternal age in a public hospital

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Table I. Options of Down screening tests offered in our PDC.*

Categories of Down screening test	1st trimester combined screening test	Full integrated test	Partial integrated test	2nd trimester biochemical screening test
NT measurement (weeks)	11–13	11–13	11–13	–
Maternal serum free hCG & PAPP-A	On same day as NT measurement (NT + PAPP-A + free hCG)	On same day as NT measurement (NT + PAPP-A)	–	–
Maternal serum total hCG & aFP (weeks)	–	16–19	16–19	16–19
Detection rate (%)	80–90	80–90	80–90	60–70
False positive rate (%)	5	1	5	5
Cutoff point of ranking high risk	1:250	1:200	1:320	1:250
Charge (HK dollars)**	\$450	\$800	Free***	Free***

Screening options for Down syndrome: how women choose in real clinical setting

T. K. Lo*, F. K. Lai, W. C. Leung, W. L. Lau, L. S. Ng, W. C. Wong, S. S. Tam, Y. C. Yee, H. Choi, H. S. W. Lam, A. S. Y. Sham, L. C. H. Tang and R. K. H. Chin

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Objective To study pregnant women's preference among various screening options for Down syndrome (DS) in routine clinical setting, and its potential association with women's demographic characteristics.

Methods Women aged 35 years and older carrying singleton pregnancy were offered a variety of screening tests for DS before 14 weeks of gestation. Their preference was confirmed by the test they actually underwent. The association between women's choice of test and a number of demographic characteristics was studied using multinomial regression.

Results Among 1967 eligible women, 619 opted for first-trimester screening test (FTS), 924 for partial integrated test (PIT), and 424 for full integrated test (FIT). *Nulliparous* women and *working* mothers were more likely to choose FTS and FIT. Women with *higher education* were more likely to choose FIT. Women with *family history of chromosomal abnormalities* were more likely to choose FTS. The choice of screening test could be predicted for 49.9% of women using four demographic characteristics.

Conclusions Among older women of predominantly Chinese ethnicity, integrated test is a favorite alternative to FTS. Their choice of DS screening test can be predicted by their obstetric and socioeconomic characteristics. Many women show willingness to pay for a test with a lower false-positive rate. Copyright © 2009 John Wiley & Sons, Ltd.

KEY WORDS: Down syndrome; screening; advanced maternal age; women's preference

Prospective assessment of the Hong Kong Hospital Authority universal Down syndrome screening programme.

Sahota DS¹, Leung WC, Chan WP, To WW, Lau ET, Leung TY.

Author information

Abstract

OBJECTIVE: To evaluate the performance of the locally developed universal Down syndrome screening programme.

DESIGN: Population-based cohort study in the period July 2010 to June 2011 inclusive.

SETTING: Four Hong Kong Hospital Authority Departments of Obstetrics and Gynaecology and a central university-based laboratory for maternal serum processing and risk determination.

PARTICIPANTS: Women were offered either a first-trimester combined test (nuchal translucency, free beta human chorionic gonadotropin, and pregnancy-associated plasma protein-A) or nuchal-translucency-only test, or a second-trimester double test (alpha-fetoprotein and total human chorionic gonadotropin) for detection of Down syndrome according to their gestational age. Those with a trisomy 21 term risk of 1:250 or higher were offered a diagnostic test.

RESULTS: A total of 16 205 pregnancies were screened of which 13 331 (82.3%) had a first-trimester combined test, 125 (0.8%) had a nuchal-translucency test only, and 2749 (17.0%) had a second-trimester double test. There were 38 pregnancies affected by Down syndrome. The first-trimester screening tests had a 91.2% (31/34) detection rate with a screen-positive rate of 5.1% (690/13 456). The second-trimester test had a 100% (4/4) detection rate with a screen-positive rate of 6.3% (172/2749). There were seven (0.9%) pregnancies that miscarried following an invasive diagnostic test. There were two Down syndrome-affected live births, both with an estimated first-trimester trisomy 21 term risk lower than 1:250.

CONCLUSION: The universal screening programme offered at the four units was effective and achieved the expected detection rates and low false-positive rates, and to maintain these, the current emphasis on training, quality control, and regular auditing must continue.

Women's uptake of non-invasive DNA testing following a high-risk screening test for trisomy 21 within a publicly funded healthcare system: findings from a retrospective review.

Chan YM¹, Leung WC, Chan WP, Leung TY, Cheng YK, Sahota DS.

Author information

Abstract

OBJECTIVE: The objective of the study was to evaluate the uptake of non-invasive cell-free fetal DNA screening test (NIDT) after a high-risk screening result for trisomy 21 **METHODS:** Association between maternal and pregnancy characteristics on women's test choice was assessed after adjusting for confounding factors in Hong Kong Chinese women who had a high-risk (term risk $\geq 1:250$) first-trimester or second-trimester screening test at three public hospitals. Main outcome measures were rate of declining further testing and obstetric and maternal factors impacting on patient's selection of testing options.

RESULTS: Compared with the pre-NIDT period, the availability of NIDT resulted in a 45% ($P < 0.001$) reduction in the rate of refusal for further testing and a decrease from 92.2% to 66.7% in the use of invasive diagnostic test after a positive screening test. Nulliparous women with a spontaneous [adjusted odds ratio (aOR) = 2.18, 95% confidence interval (CI) 1.63-2.92] or assisted reproduction pregnancy (aOR = 3.95, 95% CI 1.6-9.32) were more likely to choose NIDT. Women with an adjusted risk of '>1:10' (aOR = 7.36, 95% CI 4.22-12.8) and '1:10 to 1:50' (aOR = 1.53, 95% CI 1.01-2.32) were more likely to opt for chorionic villi sampling or amniocentesis.

CONCLUSIONS: NIDT reduced the refusal rate. Uptake of NIDT was highest in pregnancies of nulliparous women.

Whole-genome array CGH evaluation for replacing prenatal karyotyping in Hong Kong.

Kan AS¹, Lau ET¹, Tang WF², Chan SS³, Ding SC³, Chan KY¹, Lee CP¹, Hui PW¹, Chung BH⁴, Leung KY⁵, Ma T⁵, Leung WC⁶, Tang MH¹.

Author information

Abstract

OBJECTIVE: To evaluate the effectiveness of whole-genome array comparative genomic hybridization (aCGH) in prenatal diagnosis in Hong Kong.

METHODS: Array CGH was performed on 220 samples recruited prospectively as the first-tier test study. In addition 150 prenatal samples with abnormal fetal ultrasound findings found to have normal karyotypes were analyzed as a 'further-test' study using NimbleGen CGX-135K oligonucleotide arrays.

RESULTS: Array CGH findings were concordant with conventional cytogenetic results with the exception of one case of triploidy. It was found in the first-tier test study that aCGH detected 20% (44/220) clinically significant copy number variants (CNV), of which 21 were common aneuploidies and 23 had other chromosomal imbalances. There were 3.2% (7/220) samples with CNVs detected by aCGH but not by conventional cytogenetics. In the 'further-test' study, the additional diagnostic yield of detecting chromosome imbalance was 6% (9/150). The overall detection for CNVs of unclear clinical significance was 2.7% (10/370) with 0.9% found to be de novo. Eleven loci of common CNVs were found in the local population.

CONCLUSION: Whole-genome aCGH offered a higher resolution diagnostic capacity than conventional karyotyping for prenatal diagnosis either as a first-tier test or as a 'further-test' for pregnancies with fetal ultrasound anomalies. We propose replacing conventional cytogenetics with aCGH for all pregnancies undergoing invasive diagnostic procedures after excluding common aneuploidies and triploidies by quantitative fluorescent PCR. Conventional cytogenetics can be reserved for visualization of clinically significant CNVs.

Use of second-line therapies for management of massive primary postpartum hemorrhage.

Chan LL¹, Lo TK, Lau WL, Lau S, Law B, Tsang HH, Leung WC.

Author information

Abstract

OBJECTIVE: To determine rates of use and success of second-line therapies for massive primary postpartum hemorrhage (PPH).

METHODS: A retrospective cohort study was conducted among 91 women who gave birth at Kwong Wah Hospital, Hong Kong, between January 1, 2006, and December 31, 2011. Inclusion criteria were gestational age of at least 24 weeks and massive PPH (defined as blood loss ≥ 1500 mL within 24 hours after birth). Second-line therapies assessed were uterine compression sutures, uterine artery embolization, and balloon tamponade after failure of uterine massage and uterotonic agents to stop bleeding.

RESULTS: The rate of massive PPH was 2.65 per 1000 births. Second-line therapies were used among 42 women with PPH, equivalent to a rate of 1.23 per 1000 births. Only 21.4% of the women who received second-line therapies required rescue hysterectomy. A rising trend was observed for the use of second-line therapies, whereas the incidence of rescue hysterectomy and estimated blood loss were found to concomitantly decrease.

CONCLUSION: Increasing use of second-line therapies among women with massive PPH was associated with a decreasing trend for rescue hysterectomy. Obstetricians should, therefore, consider all available interventions to stop PPH, including early use of second-line options.

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KEYWORDS: Balloon tamponade; Hysterectomy; Primary postpartum hemorrhage; Second-line therapy; Uterine arterial embolization; Uterine compression suture

Intensive care unit admission of obstetric cases: a single centre experience with contemporary update.

Ng VK¹, Lo TK, Tsang HH, Lau WL, Leung WC.

⊕ Author information

Abstract

OBJECTIVES. To review the characteristics of a series of obstetric patients admitted to the intensive care unit in a regional hospital in 2006-2010, to compare them with those of a similar series reported from the same hospital in 1989-1995 and a series reported from another regional hospital in 1998-2007. **DESIGN.** Retrospective case series. **SETTING.** A regional hospital in Hong Kong. **PATIENTS.** Obstetric patients admitted to the Intensive Care Unit of Kwong Wah Hospital from 1 January 2006 to 31 December 2010. **RESULTS.** From 2006 to 2010, there were 67 such patients admitted to the intensive care unit (0.23% of total maternities and 2.34% of total intensive care unit admission), which was a higher incidence than reported in two other local studies. As in the latter studies, the majority were admitted postpartum (n=65, 97%), with postpartum haemorrhage (n=39, 58%) being the commonest cause followed by pre-eclampsia/eclampsia (n=17, 25%). In the current study, significantly more patients had had elective caesarean sections for placenta praevia but fewer had had a hysterectomy. The duration of intensive care unit stay was shorter (mean, 1.8 days) with fewer invasive procedures performed than in the two previous studies, but maternal and neonatal mortality was similar (3% and 6%, respectively). **CONCLUSION.** Postpartum haemorrhage and pregnancy-induced hypertension were still the most common reasons for intensive care unit admission. There was an increasing trend of intensive care unit admissions following elective caesarean section for placenta praevia and for early aggressive intervention of pre-eclampsia. Maternal mortality remained low but had not decreased. The intensive care unit admission rate by itself might not be a helpful indicator of obstetric performance.

KEYWORDS: Hysterectomy; Intensive care units; Maternal mortality; Postpartum hemorrhage; Pre-eclampsia

Thank you

Good luck with your research!

