SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

Date: 06.12.2021

From
Dr, Ambigai Meena ,
Professor and HOD,
Department of Obstetrics and Gynaecology,
Sri Lakshmi Narayana Institute of Medical Sciences,
Bharath Institute of Higher Education and Research,
Chennai.

To
The Dean,
Sri Lakshmi Narayana Institue Of Medical Sciences,
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Permission to conduct value-added course: Antibiotics in Obstetrics and Gynaecology

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: **Antibiotics in Obstetrics and Gynaecology** on MARCH 2022 -MAY 2022. We solicit your kind permission for the same.

Kind Regards

Dr. Ambigai Meena,

FOR THE USE OF DEANS OFFICE

Names of Committee members for evaluating the course:

The Dean: Dr. Sugumaran

The HOD: **Dr. Ambigai meena**

The Expert:**Dr. Swetha. T**

The committee has discussed about the course and is approved.

Dean	Subject Expert	HOD
DEAN SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES OSUDU, AGARAM VILLAGE, KOODAPAKKAM POST, PUDUCHERRY - 605 502	ASSISTANT PROFESS DEPT. OF OBSTETRICS & GYNAEC Sri Lakshmi Narayana Instit Medical Sciences OSUDU, PUDUCHERR	PROFESSOR & HEAD DEPT. OF OBSTETRICS & GYNAECOLOGY Sri Lakshmi Narayana Institute of Medical Sciences OSUDU, PUDUCHERRY.

OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.
[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affliated to Bharath University, Chennai - TN]

Circular

DATE : 20.02.2022

Sub: Organising Value-added Course: Antibiotics in Obstetrics and Gynaecology- reg

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, **Bharath Institute of Higher Education and Research**, is organising **"Antibiotics in Obstetrics and Gynaecology"**. The course content and registration form is enclosed below."

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before 28.02.2022. Applications received after the mentioned date shall not be entertained under any circumstances.

DEAN
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, AGARAM VILLAGE,
KOODAPAKKAM POST,
PUDUCHERRY - 605 502

Encl: Copy of Course content and Registration form.

Course Proposal

Course Title:Antibiotics in Obstetrics and Gynaecology

Course Objective:

1. Basic definition
2. MDR
3. SAMP
4. OP management of common infection
5. Antibiotic prophylaxis recommendation
6. Specific condition and pathogen -directed treatment recommendation
7. Usage of Gentamycin in Obs
8. Prophylactic antibiotic choice at C-SEC
9. Endocarditis prophylaxis
10. Do'and DON'T

Course Outcome: knowledge about antibiotics usage in obstetrics and gynaecology

Course Audience: Final MBBS Undergraduates

Course Coordinator: Dr. T.Swetha

Course Faculties with Qualification and Designation:

Dr. Ambigai Meena. Prof and HOD, OG

Dr. Swetha.T , Assistant Professor, OG

Course Curriculum/Topics with schedule (Min of 30 hours)

SlNo	Date	Topic	Time	Hours
1	2.03.2022	Basic definition	4.00pm -7.00pm	3
2	16.03.2022	MDR	4.00pm -7.00pm	3
3	25.03.2022	SAMP	4.00pm -7.00pm	3
4	30.03.2022	OP management of common infection	4.00pm -7.00pm	3
5	5.04.2022	Antibiotic prophylaxis recommendation	4.00pm -7.00pm	3
6	10.04.2022	Specific condition and pathogen -directed treatment recommendation	4.00pm-7.00pm	3
7	14.04.2022	Usage of Gentamycin in Obs	4.00pm -7.00pm	3
8	20.04.2022	Prophylactic antibiotic choice at C-SEC	4.00pm -7.00pm	3
9	22.04.2022	Endocarditis prophylaxis	4.00pm -7.00pm	3
10	3.05.2022	Do'and DON'T	4.00pm -7.00pm	3
			Total Hours	30

REFERENCE BOOKS: (Minimum 2)

Williams Obstetrics Edition 21

Williams Gynaecology Edition 18

Textbook of Gynaecology - Shaw

Textbook of Obstetrics - Dutta

VALUE ADDED COURSE

1. Name of the programme & Code

Antibiotics in obstetrics and Gynecology, OBGY 6

2. Duration & Period

30 hrs & MARCH 2022 - MAY 2022

3. Information Brochure and Course Content of Value Added Courses

Enclosed as Annexure- I

4. List of students enrolled

Enclosed as Annexure- II

5. Assessment procedures:

Multiple choice questions- *Enclosed as Annexure- III*

6. Certificate model

Enclosed as Annexure- IV

7. No. of times offered during the same year:

1 MARCH 2022 - MAY 2022

8. Year of discontinuation: 2022

9. Summary report of each program year-wise

Value Added Course					
Sl. No	**Course Code**	**Course Name**	**Resource Persons**	**Target Students**	**Strength & Year**
1	OBGY 6	Antibiotics in obstetrics and gynecology	Dr. Swetha .T	FINAL YEAR MBBS	MARCH 2022 - MAY 2022

10. Course Feed Back

Enclosed as Annexure- V

RESOURCE PERSON **COORDINATOR**

ASSISTANT PROFESS
DEPT. OF OBSTETRICS & GYNAEC
Sri Lakshmi Narayana Instit
Medical Sciences
OSUDU, PUDUCHERRY

DEAN
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, AGARAM VILLAGE,
KOODAPAKKAM POST,
PUDUCHERRY - 605 502

ANTIBIOTICS IN OBSTETRICS AND GYNECOLOGY

PARTICIPANTS HANDBOOK

COURSE DETAILS

Particulars	Description
Course Title	Antibiotics in pregnanacy
Course Code	OBGY 06
Objective	Introduction Basic definitions Antibiotic recommendations
Further learning opportunities	Microbiology and antibiotic spectrum
Key Competencies	On successful completion of the course the students will have knowledge on antibiotic usage
Target Student	Final MBBS Students
Duration	30hrs every April 2021 to August 2021 and September 2021 to January 2022
Theory Session	10hrs
Practical Session	20hrs
Assessment Procedure	Multiple choice questions

INTRODUCTION

1. Consultation undertaken on this course

This guideline has been the subject of consultation with the Consultant Medical

Microbiologist, Consultant Radiologist and Lead Antimicrobial Pharmacist. The guideline

has also been considered and approved by the Maternity Clinical Governance Committee.

2. Implementation

This approved guideline will be placed on the intranet and will be cascaded though

directors to line managers and staff.

3. Purpose of the course

Is to provide evidence-based recommendations for the antibiotic treatment and

prophylaxis of infections in obstetrics, based on the local epidemiology and antimicrobial

susceptibility profiles of pathogens

BASIC DEFINITIONS

1. Microbiological diagnosis and antibiotic treatment of common infections in pregnancy

(during the antenatal, intrapartum and peripartum periods) and, postpartum period

including the lactation period

2. Antibiotic prophylaxis for prevention of Early-onset Neonatal Group B Streptococcal

disease (EOGBSD)

3. Antibiotic prophylaxis for common obstetric procedures

4.Terms and definitions:

a) **Bacteriuria** defined as presence of bacteria in urine, can be detected by:

• Urine dipstick test for nitrites (N), resulting from conversion of dietary nitrates to

nitrites by 'coliform' bacteria (Enterobacteriaceae).

o At least 4 hour bladder incubation is required for N test to be reliable.

o Nitrite reagent on the dipstick is sensitive to environmental air- improperly

stored, or use of out-of-date dipsticks could result in false-positive N test.

o Non-nitrate reducing organism and low nitrate diet could produce a falsenegative N result.

• Urine culture is the gold standard (reference) test for detection of bacteriuria

• Asymptomatic bacteriuria (ASB) refers to presence of ≥105 CFU/mL of bacteria in

MSU in absence of symptoms of UTI

b) CCU refers to specimen of urine collected after local cleaning of urethral meatus and

surrounding mucosa.

c) **Early-onset neonatal group B streptococcus disease (EOGBSD)** is defined as GBS

infection with onset within 72 hours of birth

d) **ESBL-producing GNB** refers to a strain of GNBs that produces beta-lactamase enzymes

capable of hydrolysing broad-spectrum cephalosporin's such as Cefotaxime, ceftriaxone

and Ceftazidime

e) **Haematuria** defined as presence of >2 RBCs/mm3, can be detected by urine dipstick test

for haematuria (H)

f) '**High risk for GBS**' refers to a woman with previous baby with early-or late-onset invasive

Group B Streptococcus (GBS) infection

g) '**High risk for MRSA**' refers to a patient with ≥ 1 of following risk factors

1. Known 'MRSA Positive' (previously infected or colonised with MRSA)

2. Hospitalisation in or outside the trust in the past year

3. Frequent re-admissions to any healthcare facilities

4. Diabetes and BMI ≥ 40 kg/m2

5. Health care worker with any form of direct patient contact and veterinary staff

6. Intravenous drug use

7. Patients infected with HIV

h) 'High risk for STIs'

8. ≤25 years old

9. New sexual partner or >1 sexual partner in the last 12 months, or sex partner with

concurrent partners

10.Sex contact of a case with STI

11.Asymptomatic women requesting 'STI Screen'

i) Hospital-acquired infection (HAI) refers to an infection that is neither present nor

incubating at the time of hospital admission but, acquired ≥ 48 hours after admission

j) Intra-amniotic infection (IAI) or chorioamnionitis refers to infection of foetal

membranes (chorion and amnion) amniotic fluid, foetus, umbilical cord and placenta.

k) **MSU** refers to second portion of the voided urine specimen collected after discarding

the initial stream.

l) **Modified Early Obstetric Warning Score (MEOWS)** refers to screening tool used for

maternal sepsis. Please refer to the Maternal sepsis prevention, recognition and

management (GL872)

m) **Multidrug resistant (MDR)** bacteria refers to strains of bacteria that are resistant to ≥2

classes of antibiotics such as MRSA is resistant to all beta lactam class of antibiotics and

may also be resistant to macrolide antibiotics such as erythromycin and quinolone class of

antibiotics such as ciprofloxacin

n) **Preterm** refers to before 37 completed weeks of gestation

o) **Preterm labour** refers to onset of labour before 37 completed weeks of gestation

p) **Premature rupture of membranes (PROM)** refers to rupture of membranes before onset of labour or prelabour ROM (PLROM)

q) **Preterm PROM (PPROM)** or PPLROM refers to PROM before 37 completed weeks of gestation

r) **Pyuria** refers to presence of white cells (pus cells) in urine specimen, can be detected by:

• Urine dipstick test for leucocyte esterase (LE)

Urine dipstick test for LE is more sensitive than, and as specific as urine

microscopy for detection of pyuria.

s) **Sepsis** is defined as the life-threatening organ dysfunction resulting from dysregulated host

response to infection

t) **Surgical Antimicrobial Prophylaxis (SAMP)** is defined as the peri-procedural

administration of a single therapeutic IV dose of an antimicrobial agent, administered

usually 30-60 minutes before the start of a procedure to prevent infectious complication.

Table 1: Empirical Antibiotic Treatment Recommendations

BMI-based patient stratification: Lean (BMI <30), Obese (BMI 30-39.9), morbidly obese (BMI≥40). Use patient's antenatal booking weight to calculate BMI

All dosage recommendations are for patients with normal renal and hepatic functions unless stated otherwise. Dosages should be adjusted to suit

person's age, weight, hepatic and renal function. Please contact your ward pharmacist, if necessary.

Clinical Indication	Clinical Assessment	Diagnostic Evaluation	Treatment Recommendations		Comments
			First Choice	Alternatives e.g. 'True Penicillin allergy' (See penicillin allergy guideline here)	
▪ **Asymptomatic bacteriuria (ASB)**	• All pregnant women should be screened for ASB (with urine culture) at 12-16 weeks gestation or at the first antenatal visit • **ASB is diagnosed by positive urine culture** (with bacterial growth $\geq 10^5$ CFU/mL) **WITHOUT** any symptoms of UTI	• Urine dipstick tests for LE and N should not be used • MSU should be sent for C&S • A follow-up urine culture as test of cure (TOC) should be done a week after completion of antimicrobial treatment: ▪ **Persistent ASB**: If the TOC urine culture is positive with the same organism ▪ **Recurrent ASB**: If the TOC urine culture is positive with a different organism or TOC urine culture is negative but a subsequent urine culture is positive with the same or different organism	**Always treat based on the UC&S results** • PO amoxicillin 1g 8 hourly for 7 days **OR** • PO cefradine 500 mg 6 hourly for 7 days	• PO nitrofurantoin 50mg 6 hourly for 5 days (if eGFR ≥ 45mls/min) *(Avoid in the third trimester and at term and in G-6PD deficiency)* **OR** • PO trimethoprim 200 mg 12 hourly for 7 days *(Avoid in the first trimester* *Avoid in those on a folate antagonist* *And consider 5mg folic acid daily in those at risk of folic acid deficiency)*	• ASB in pregnancy **MUST** be treated to reduce risk of progression to acute pyelonephritis, low birth weight, pre-term delivery and perinatal mortality
			MDR infection: Based on the UC&S results • PO fosfomycin 3g single dose, **OR** • PO nitrofurantoin 50mg 6 hourly for 7 days (if eGFR ≥ 45mls/min) *Avoid use during the first trimester and at term and in G-6PD deficiency* • Please discuss with CMM, if required		
			Persistent ASB: • Repeat another course of antimicrobial treatment (as above) based on UC&S		
			Recurrent ASB: • Treat based on UC&S • Antimicrobial prophylaxis is **NOT** recommended		
▪ **Cystitis**	• Dysuria, frequency/urgency, supra-pubic discomfort • Fever and chills are generally absent in isolated cystitis	• Urine dipstick for LE and N • MSU/CCU for C &S • Diagnosis of cystitis is confirmed by positive urine culture with bacterial growth of $\geq 10^4$-10^5 CFU/mL • A follow-up repeat urine culture one week after completion of treatment as TOC is recommended	• **Please review previous UC&S results.** Discuss with CMM, if necessary • Treat as above for ASB **Recurrent UTI:** • PO cefradine 500 mg (post-coital or at bedtime) **OR** • PO nitrofurantoin 50 mg if eGFR ≥ 45ml/min (post-coital or at bedtime) *(Avoid use during the third trimester and at term and in G-6PD deficiency)*		• Dysuria without positive culture (bacteriuria) or persistent dysuria despite successful antimicrobial treatment of bacteriuria should warrant testing for STIs (CT & NG)

Clinical Indication	Clinical Assessment	Diagnostic Evaluation	Treatment Recommendations		Comments
			First Choice	Alternatives e.g. 'True Penicillin allergy' (See penicillin allergy guideline here)	
▪ **Acute Pyelonephritis (APN)**	• Fever and chills, nausea/vomiting, flank pain renal angle tenderness • ± symptoms or signs (s/s) of cystitis	• Urine dipstick for LE and N • MSU/CCU for C &S • BC (before antibiotics)	IV aztreonam 2 g 8 hourly **Known ESBL Positive**: • IV temocillin 2 g 12 hourly for 24-48 hours followed by IV/PO treatment based on the UC&S • **Duration of treatment: 7 days**	• IV aztreonam 2 g 8 hourly	• Once afebrile for 48 hours switch IV to PO antibiotics based on UC&S
▪ **Urosepsis**	• UTI + MEOWS ≥3	• BC (before antibiotics) • MSU/CCU for C &S	• IV Meropenem 1g 8 hourly • Review and revise treatment in light of culture results	• IV gentamicin* 5 mg/kg OD	*See Appendix 1&2 for information on gentamicin monitoring*
▪ **Pharyngitis**	• Fever, tonsillar exudate, tender anterior cervical LNs	• Throat swab for C&S	• PO amoxicillin 1g 8 hourly or IV amoxicillin 1g 6 hourly	• PO clarithromycin 500 mg 12 hourly (Avoid in 1st trimester unless benefit outweigh risk)	
▪ **Community acquired pneumonia (CAP)**	• Fever, SOB, cough +/-sputum, chest pain • Antecedent history of (h/o) influenza	• **BC** (before antibiotics) • Sputum for C&S • Pneumococcal & Legionella urine antigen tests • **In Winter months:** Nasopharyngeal swab in VTM for Flu PCR	• PO/IV amoxicillin 1g 8 hourly + • PO/IV azithromycin 500 mg 24 hourly	**Non-anaphylactic type-Pen-allergy** • IV ceftriaxone 2 g 24 hourly + • PO/IV azithromycin 500 mg 24 hourly **Anaphylactic type Pen-allergy** • IV vancomycin 10mg/kg 12 hourly + • PO/IV azithromycin 500 mg 24 hourly	• Pregnant women with pneumonia are at risk of preterm labour/delivery • In-patient treatment until clinical stability is recommended • Switch IV ceftriaxone 2g 24 hourly to PO cefradine 500 mg 6 hourly when clinical improvement
	Severe CAP: • Rapidly progressive CAP evolving into ARDS • Severe sepsis • Haemoptysis		**Severe CAP** • IV benzylpenicillin 1.2 g 6 hourly + • IV clindamycin 1.2 g 6 hourly or PO clindamycin 600 mg 6 hourly	**Non-anaphylactic type-Pen-allergy** • IV ceftriaxone 2 g 24 hourly + • IV clindamycin 1.2 g 6 hourly or PO clindamycin 600 mg 6 hourly **Anaphylactic type Pen-allergy** • IV vancomycin 10mg/kg 12 hourly + • IV clindamycin 1.2 g 6 hourly or PO clindamycin 600 mg 6 hourly	

Clinical Indication	Clinical Assessment	Diagnostic Evaluation	Treatment Recommendations		Comments
			First Choice	Alternatives e.g. 'True Penicillin allergy' (See penicillin allergy guideline here)	
▪ *Clostridium difficile* Infection		• Diarrhoeal stool specimen for CDI testing	**Please refer to the** Adult Medicine Antibiotic Protocol 2018-19 on Micro Guide (mobile/web version)		
Maternal Sepsis: ▪ **Sepsis in pregnancy** ▪ **Chorioamnionitis or IAI** ▪ **Endometritis** ▪ **Peri-partum maternal pyrexia** ▪ **Sepsis following pregnancy** (≤6 weeks postnatal) ▪ **Post-partum sepsis/post-abortion sepsis/puerperal sepsis** ▪ **Post-partum endometritis** ▪ **Sepsis of unknown origin**	S/s relevant to the most likely focus of infection such as: • Pharyngitis • Pneumonia • UTI • IAI • Breast abscess: Fever, rigors, spiking temperature • Mastitis: Breast engorgement/redness • TSS: Generalised maculopapular rash • Endometritis: Abdominal pain/tenderness, offensive vaginal discharge • Pneumonia: Cough, SOB, chest pain • Wound infection: LSCS, episiotomy, perineal wound, epidural site • Gastrointestinal (GI): Diarrhoea, vomiting • Non-specific s/s: lethargy, reduced appetite **PLUS** • MEOWS ≥3: ▪ Temperature, PR, RR, BP, level of consciousness, SpO2 • Risk stratify sepsis as: ▪ **Red flag** or **Amber flag** sepsis ▪ Or, **low risk of sepsis**	• **BC** X 2 sets (prior to antibiotics) • Other relevant cultures based on the suspected focus of infection e.g: ▪ IAI: Amniotic fluid, HVS ▪ Endometritis: HVS ▪ Post-partum endometritis: LVS placental swab ▪ Meningitis: Cerebrospinal fluid (CSF) ▪ Epidural abscess ▪ Mastitis: expressed breast milk ▪ Caesarean section or perineal wound swab ▪ Faeces, if diarrhoea ▪ UC&S, if UTI	**First Choice** • IV amoxicillin 1g 8 hourly + IV clindamycin 1.2 g 6 hourly for 48 – 72 hours + IV gentamicin* 5 mg/kg STAT **Followed by:** • Pathogen-targeted therapy based on the C&S results and clinical re-assessment • Discuss with CMM, if necessary	**MRSA Positive or Penicillin allergy:** • IV teicoplanin 12 mg/kg 12 hourly for 3 doses, then 10 mg/kg 24 hourly + IV clindamycin 1.2 g 6 hourly + IV gentamicin* 5 mg/kg STAT **Followed by:** • Pathogen-targeted therapy based on the C&S results and clinical re-assessment • Discuss with CMM, if necessary	
			Known ESBL positive • IV temocillin 2 g 12 hourly + • IV clindamycin 1.2 g 6 hourly **For 48 – 72 hours, followed by:** • Pathogen-targeted therapy based on the C&S results and clinical re-assessment • Discuss with CMM, if necessary	**Known ESBL positive** • IV teicoplanin 12 mg/kg 12 hourly for 3 doses, then 10 mg/kg 24 hourly + • IV clindamycin 1.2 g 6 hourly + • IV gentamicin* 5 mg/kg STAT **Followed by:** • Pathogen-targeted therapy based on the C&S results and clinical re-assessment • Discuss with CMM, if necessary	

Clinical Indication	Clinical Assessment	Diagnostic Evaluation	Treatment Recommendations		Comments
			First Choice	Alternatives e.g. 'True Penicillin allergy' (See penicillin allergy guideline here)	
▪ **Caesarean section (incisional) wound infection**	• S/s of superficial incisional wound infection: redness, pain, swelling, wound dehiscence, discharge • S/s deep tissue infection: haematomas, seroma, abscess • S/s of post-caesarean section endometritis	• Wound swab or aspirate	• Antibiotic treatment is recommended for localised cellulitis or associated sepsis or associated sepsis in addition to drainage of collection or debridement • Surgical review of wound to drain any localised or deep collection		• Caesarean section wound infection is a surgical site infection.
			• IV co-amoxiclav 1.2 g 8 hourly or PO co-amoxiclav 625 mg 8 hourly	**Penicillin-allergy or MRSA Positive** • IV teicoplanin 10 mg/kg 12 hourly for 3 doses, then 10 mg/kg 24 hourly	
▪ **Mild – Moderate Endometritis following vaginal delivery.** ▪ **NB: If severe treat as MATERNAL SEPSIS**	• S+S of endometritis post vaginal delivery	• Vaginal swab	• PO Co-amoxiclav 625mg 8 hourly	• IV Gentamicin 5mg/kg for 48hrs + • PO Clindamycin 450mg QDS for 5 days	Re-evaluate penicillin allergy status. Only consider alternative treatment if patient has true penicillin allergy
▪ **Lactational mastitis** ▪ **Breast abscess**	• Red, swollen, painful breast ± • S/s of breast abscess: Localised painful fluctuant and tender mass associated with fever, rigors and malaise	• Expressed milk for C&S if severe sepsis, hospital-acquired infection (HAI) or unresponsive to initial treatment • **BC** X 2 sets if clinically 'septic' • Pus/aspirate for C&S	PO flucloxacillin 1 g 6 hourly	IV clindamycin 1.2 g 6 hourly or PO clindamycin 450 mg 6 hourly	
			Known MRSA positive • IV teicoplanin** 10 mg/kg 12 hourly for 3 doses, then 10 mg/kg 24 hourly **OR** • PO linezolid 600mg 12 hourly for 5/7 days (*Use only if no other option and benefit outweighs risk*)		

**Use booking weight for BMI < 30. Use corrected dosing weight if BMI ≥ 30. See appendix 1&2 below to calculate gentamicin dose*

***Use booking weight for actual weight*

Table 2: Out-patient Management of Common Infections in Pregnancy

All dosage recommendations are for patients with normal renal and hepatic functions unless stated otherwise. Dosages should be adjusted to suit person's age, weight, hepatic and renal function. *Please contact your pharmacist, if necessary.*

Clinical condition/diagnosis	Microbiology Investigation	First-line treatment	Alternative(s)
Urinary tract infection (UTI) *For empirical treatment please review previous UC&S results, if any*	**Always send** • MSU/CCU for C &S	PO nitrofurantoin 50mg 6 hourly for 7 days (if eGFR ≥ 45mls/min) *(Avoid in the third trimester and at term and in G-6PD deficiency)* **OR if eGFR <45ml/min AND** **If sensitive to** amoxicillin/cefradine: • PO amoxicillin 1g 8 hourly **for 7 days** • PO cefradine 500mg 6 hourly **for 7 days**	**If sensitive to** trimethoprim • PO trimethoprim 200mg 12 hourly **for 7 days** *(Avoid in the first trimester* *Avoid in those on a folate antagonist* *And consider 5mg folic acid daily in those at risk of folic acid deficiency)*
Community acquired pneumonia (CAP) **'Low risk' (CRB65= 0)**		• PO amoxicillin 1g 8 hourly **for 5 days**	**Non-anaphylactic type-Pen-allergy** • PO cefradine 500mg 6 hourly **for 5 days** **Anaphylactic type Pen-allergy** • PO clindamycin 450 mg 6 hourly
Abnormal vaginal discharge: Common causes of abnormal vaginal discharge include: Bacterial vaginosis (BV), Vulvovaginal candidiasis (VVC), Trichomonas vaginalis (TV) and other sexually transmitted infection (STIs). Please refer to PHE Primary care guidance on management and laboratory diagnosis of Abnormal Vaginal Discharge **HVS culture is indicated in cases of:** • Recurrent symptoms/treatment failure • Inconclusive assessment • Pre-or post-termination of pregnancy • Postnatal or post-miscarriage			
• **Bacterial vaginosis (BV)**	Routine HVS culture is not recommended for laboratory diagnosis of BV	PO metronidazole 400mg 12 hourly **for 5 days**	**Breast feeding** • Intravaginal metronidazole gel (0.75%) once daily at night **for 5 days** **OR** • Intravaginal clindamycin cream (2%) once daily at night **for 7 days**
• **Vulvovaginal candidiasis (VVC) ('Thrush')**	• Culture not required unless recurrent	Intra-vaginal clotrimazole 500mg STAT + topical clotrimazole 1% cream 12 hourly **for 10 days**	
• **Suspected (STIs)**: Gonorrhoea (NG)/Chlamydia (CT)/Trichomonas vaginalis (TV)	• Self-taken vaginal swab or low/high vaginal swab in Chlamydia transport medium for CT/NG/TV PCR	**Please refer to GUM** IM ceftriaxone 500mg **STAT** + PO azithromycin 1g **STAT** + PO metronidazole 400mg 12 hourly **for 5 days**	
Mastitis (*If breast* abscess: Please refer patient to hospital for I&D/aspiration of abscess)	• Pus/aspirate	PO flucloxacillin 1g 6 hourly **for 5 days**	PO clindamycin 450mg 6 hourly **for 5 days**

<table>
<tr><th>Clinical Indication</th><th>Rationale</th><th>First Choice</th><th>Alternative: Penicillin allergy (Please refer to 'management of penicillin allergy' protocol)</th></tr>
<tr><td><u>IAP for GBS is indicated for women with:</u>
• Previous baby with early-or late-onset invasive GBS infection.
• GBS colonisation detected incidentally or by intentional testing of vaginal or perineal swab (specimen), GBS bacteriuria or infection, <u>in the current pregnancy</u>:
▪ <u>Universal antenatal screening for GBS is not recommended</u>
▪ Women with GBS detected in a previous pregnancy should be offered the choice of IAP without testing or, a bacteriological screening for GBS at 35-37 weeks or 3-5 days before the anticipated delivery date, and IAP if GBS carriage is detected in the current pregnancy

<u>Additional IAP for GBS is not required for women:</u>
• Undergoing Caesarean delivery (TREAT AS PER CAESAREAN SECTION GUIDANCE BELOW)
• Receiving treatment with broad spectrum antibiotics for pyrexia in labour or chorioamnionitis</td><td>• To prevent Early-onset Neonatal Group B Streptococcal disease (EOGBSD)</td><td>• IV benzylpenicillin 3 g stat dose then 1.5 g 4 hourly until delivered</td><td>For penicillin allergic patients use:
• IV teicoplanin 10mg/kg STAT dose and then 10mg/kg every 12hours until delivered
• If patient proceeds to have LSCS <u>add **gentamicin 5mg/kg STAT</u></td></tr>
<tr><td>Episiotomy repair following normal vaginal delivery</td><td colspan="3">• Routine antibiotic prophylaxis before or immediately after incision or repair of episiotomy for women with uncomplicated vaginal delivery is <u>NOT RECOMMENDED</u></td></tr>
<tr><td rowspan="2">Operative vaginal delivery (with either forceps or vacuum-assisted delivery)</td><td colspan="2">First Choice- No h/o Penicillin allergy</td><td>Alternatives e.g. 'True Penicillin allergy'</td></tr>
<tr><td colspan="2">• BMI < 30: IV co-amoxiclav 1.2 g <u>single dose</u>

• BMI ≥ 30: (IV co-amoxiclav 1.2g + IV amoxicillin 1g) <u>single dose</u>

No further doses of antibiotics required</td><td>• IV clindamycin 1.2 g <u>single dose</u> + IV gentamicin* 5 mg/kg <u>STAT</u>

No further doses of antibiotics required</td></tr>
<tr><td>Repair of third-and fourth degree perineal injuries</td><td>• To reduce risk of perineal wound infection, wound dehiscence or wound discharge</td><td colspan="2">• Routine antibiotic prophylaxis is not recommended for women with a third- or fourth-degree perineal tear

• BMI < 30: IV co-amoxiclav 1.2 g <u>single dose</u>

• BMI ≥ 30: (IV co-amoxiclav 1.2g + IV amoxicillin 1g) <u>single dose</u>

• No further doses of antibiotics required</td><td>• IV clindamycin 1.2 g single dose + IV gentamicin * 5 mg/kg STAT</td></tr>
</table>

Table 3: Antimicrobial Prophylaxis Recommendations

BMI-based patient stratification: Lean (BMI <30), Obese (BMI 30-39.9), morbidly obese (BMI≥40). Use patient's antenatal booking weight to calculate BMI

All dosage recommendations are for patients with normal renal and hepatic functions unless stated otherwise. Dosages should be adjusted to suit person's age, weight, hepatic and renal function. *Please contact your ward pharmacist, if necessary*.

Clinical Indication	Rationale	First Choice	Alternative: Penicillin allergy *(Please refer to 'management of penicillin allergy' protocol)*
Amniocentesis	• **Antibiotic prophylaxis is NOT recommended**		
Evacuation of retained products of conception (ERPC) after medical termination of pregnancy or mid-trimester delivery	• To reduce risk of upper genital tract infection	IV co-amoxiclav 1.2g **single dose**	IV metronidazole 500 mg single dose + PO doxycycline 200 g single dose
Pre-term premature rupture of membrane (P-PROM) or Preterm pre-labour rupture of membranes (P-PLROM)	• To prolong pregnancy • To reduce maternal and neonatal infection and, • Gestational age-related neonatal morbidity	• PO amoxicillin 1 g 8 hourly for 7 days or until the women is in established labour (whichever is sooner) • In labour require antibiotics as for GBS (see below)	• PO azithromycin 500mg 24 hourly for 7 days or until the women is in established labour (whichever is sooner)
Cervical cerclage	• To reduce risk of endometritis	• IV co-amoxiclav 1.2g **single dose**	• IV clindamycin 1.2 g **single dose**

Premature/prelabour rupture of membranes (PROM/PLROM) at term	• To prevent Early-onset Neonatal Group B Streptococcal disease (EOGBSD)	• **Routine antibiotic prophylaxis is not recommended for women with premature/prelabour rupture of amniotic membranes at term**
		• **Antibiotic prophylaxis** (as above for P-PROM or P-PLROM) **is indicated if:**
		  • 'GBS Positive' i.e., GBS colonisation, bacteriuria or infection detected in the current pregnancy
		  • Prolonged rupture of membranes ≥ 48 hours
		  • Maternal pyrexia (Temperature >38°C)	

Preterm labour (with intact membranes)	• **Routine antibiotic prophylaxis is not recommended for women in preterm labour with intact amniotic membranes** • **Antibiotic prophylaxis is recommended if** 'GBS Positive' i.e., GBS colonisation, bacteriuria or infection detected in the current pregnancy (as above for P-PROM or P-PLROM) • **Antibiotic treatment is recommended if** evidence of infection e.g., maternal pyrexia (Temperature >38°C): *As above* for IAI or chorioamnionitis		
Preterm labour with P-PROM	• **Preterm labour with previous PROM needs antibiotics as for GBS** • IV benzylpenicillin 3 g stat dose then 1.5 g 4 hourly until delivered • For penicillin allergic patients give IV teicoplanin 10m/kg STAT dose and then 10m/kg every 12hours until delivered. **If patient proceeds to have LSCS add **gentamicin 5mg/kg STAT**		
Examination under anaesthetic (EUA)	• To reduce risk of endometritis	• IV co-amoxiclav 1.2g **single dose**	• IV clindamycin 1.2 g single dose + IV gentamicin* 5 mg/kg STAT

Clinical Indication	Rationale	First Choice	Alternative: Penicillin allergy *(Please refer to 'management of penicillin allergy' protocol)*
Caesarean section **No risk for MRSA**	• To reduce risk of surgical site infection	• **Routine antibiotic prophylaxis is recommended for women undergoing elective or emergency caesarean section** • Prophylactic antibiotics should be administered peri-operatively, usually 30 minutes before skin incision • **In emergency LSCS, in patients with PPROM or PROM over 4h or cervical dilatation ≥4 cm-Please use additional prophylaxis with IV azithromycin 500mg Single-dose (see flowchart on pg 23)**	
		• **BMI < 30**: IV co-amoxiclav 1.2 g single dose • BMI ≥ 30: (IV co-amoxiclav 1.2g + IV amoxicillin 1g) single dose **	• IV clindamycin 1.2 g single dose + IV gentamicin* 5 mg/kg STAT
'Known MRSA' or 'High risk for MRSA'		• IV teicoplanin 10mg/kg single dose + IV gentamicin* 5 mg/kg STAT	
Manual removal of placenta	• To reduce risk of postpartum endometritis	• **Routine antibiotic prophylaxis is recommended for women undergoing manual removal of the placenta** • At Caesarean delivery: No additional antimicrobial prophylaxis is necessary • After vaginal delivery: *As above* for Caesarean section	
Postpartum dilatation and curettage for retained products of conception	• **Antibiotic prophylaxis is <u>NOT</u> recommended**		

****All weights are based on patient's booking weight.**

*** If BMI ≥ 30: Corrected dosing weight = Ideal Body Weight + 40% of excess body weight (booking weight – ideal body weight)**

Table 4: Specific condition/pathogen-directed treatment recommendations

BMI-based patient stratification: Lean (BMI <30), Obese (BMI 30-39.9), morbidly obese (BMI≥40). Use patient's antenatal booking weight to calculate BMI

All dosage recommendations are for patients with normal renal and hepatic functions unless stated otherwise. Dosages should be adjusted to suit person's age, weight, hepatic and renal function. *Please contact your ward pharmacist, if necessary.*

Clinical Indication	Clinical Assessment	Diagnostic Evaluation	Treatment Recommendations		Comments
			First Choice	Alternatives e.g. 'True Penicillin allergy'	
Vaginal discharge in pregnancy/post-partum		• HVS ± Endocervical swab C&S **'High risk for STI's** or clinical suspicion of STI's : **CT/NG PCR** **<u>Symptomatic patient</u>** • HVS ± Endocervical swab • CCU **<u>Asymptomatic patient</u>** • CCU	**<u>GAS</u>**: • PO amoxicillin 1 g 8 hourly for 5 days **<u>OR</u>** • PO cefradine 500 mg 6 hourly for 5days **<u>OR</u>** • IV benzylpenicillin 1.2 g 4 hourly + IV clindamycin 1.2 g 6 hourly	• PO clindamycin 450 mg 6 hourly for 5 days **<u>OR</u>** • IV clindamycin 1.2 g 6 hourly	• IAP (as above) is indicated if GBS is detected on a vaginal swab in the current pregnancy
Trichomonas vaginalis (TV)	• Vaginitis associated with frothy, greenish-yellow discharge, vulval soreness/itching, dysuria • TV is almost exclusively an STI. • TV is associated with high prevalence of co-infection with other STIs. Please refer to GUM	• HVS for smear microscopy • HVS/Cx/CCU for CT/NG/HSV & TV PCR	• PO metronidazole 400 mg 12 hourly for 5 days (Metronidazole is safe to use in pregnancy) **<u>Breast feeding</u>** • Breastfeeding should be withheld during treatment and for 12-24 hours after the last dose to reduce infant exposure to metronidazole	• There is no suitable alternative to PO metronidazole to treat TV • Safety of tinidazole in pregnancy has not been evaluated	• Screening of sexual contacts for all STIs and treatment for TV irrespective of results is indicated • Routine screening or treatment of asymptomatic women for TV to reduce perinatal complications is not indicated • Asymptomatic women may be treated after 37 weeks to prevent perinatal transmission and reduce risk of HIV acquisition and transmission
Vaginal Candidiasis	Non-offensive white curdy discharge Vulval itch/soreness/Dysuria O/e: Vulval erythema, fissuring, oedema, excoriation	• HVS, LVS	Clotrimazole 500 mg PV STAT + topical clotrimazole 1% cream 12 hourly for 10 days		Culture not required unless recurrent

Clinical Indication	Clinical Assessment	Diagnostic Evaluation	Treatment Recommendations		Comments
			First Choice	Alternatives e.g. 'True Penicillin allergy'	
Bacterial Vaginosis (BV)	• Thin, grey/white, homogenous discharge • Fishy/offensive odour • Not associated with soreness, itching or inflammation	• Vaginal pH >4.5 **Microscopy:** • Wet mount microscopy for Clue cells performed in GUM clinic, or • A smear of discharge sent to lab for gram-stain • Microscopy indicated if: o Recurrent or, o 'High risk for STIs'	• PO metronidazole 400 mg 12 hourly for 5 days	**Breast feeding** • Intravaginal metronidazole gel (0.75%) once daily at night for 5 days **OR** • Intravaginal clindamycin cream (2%) once daily at night for 7 days	• Antibiotic treatment for BV is indicated for symptomatic women only • Routine screening for, or treatment of, asymptomatic women for BV to reduce perinatal complications is not indicated
Chlamydia trachomatis (CT) **Gonorrhoea: *Neisseria gonorrhoeae (NG)***	• Vaginal discharge • Dysuria without significant bacteriuria or persistent dysuria despite successful treatment of bacteriuria	**'High risk for STI'** • CT/NG screening in the first trimester: ST-LVS, urine for CT/NG PCR • ToC 3-4 weeks post-treatment • Re-testing in 3 months	IM ceftriaxone 500mg STAT + PO azithromycin 1 g single dose	IM spectinomycin 2 g single dose + PO azithromycin 1 g single dose	• Please refer to GUM for partner management
Influenza Refer to management of influenza on Microguide Body system > Respiratory > Influenza	• Fever, cough, runny-nose, SOB, headache, myalgia	• Nasopharyngeal swab in VTM for Flu PCR	• PO oseltamivir 75mg twice daily for 5 days		Pregnant women with influenza virus infection are at greater risk of developing complicated influenza with a more severe course PO oseltamivir and INH zanamivir are safe in pregnancy and with breast feeding
Malaria	• Fever, headache, malaise • GI disturbances: Nausea, abdominal pain, vomiting, diarrhoea **PLUS** • H/o travel to malaria-endemic area in previous 6 days-6 months, regardless of antimalarial prophylaxis	Thick and thin blood films Rapid diagnostic test 3 negative diagnostic samples over 24 hours are required to exclude malaria Blood film may be negative in complicated falciparum malaria due to high parasite load in placenta	**Uncomplicated malaria in the first trimester:** Quinine + Clindamycin **Uncomplicated malaria in the 2nd and 3rd trimester:** Artemether-lumefantrine (Riamet®) PO **Severe malaria in any trimester:** Artesunate IV		

Appendix 1: IV Gentamicin Prescribing and Monitoring Algorithm in Obstetrics Patients

Exclusions

The algorithm does not apply to:

1. Stat doses of gentamicin – no monitoring is required
2. Post-partum patients – please refer to the Adult IV Gentamicin guideline
3. Patients with the following contraindications
   - Myasthenia gravis
   - Acute Kidney Injury (AKI) stage 3
   - Chronic Kidney Disease (CKD) stage 5 not on dialysis.
   - Renal transplant
   - Child <16years – refer to Paediatric Guidelines
   - Hypersensitivity to gentamicin/aminoglycosides

Appendix 2: IV Gentamicin Prescribing and Monitoring Algorithm in Obstetrics Patients

RENAL IMPAIRMENT

Assess patient for underlying renal impairment and risk of AKI. Review most recent GFR and clinical risk factors.

GFR ≤ 30mL/min
OR
High risk of AKI

GFR > 30mL/min
AND
Low risk of AKI

CALCULATE ANTENATAL DOSE

Low-dose extended interval (LDEI) IV gentamicin regimen:

GFR (ml/min)	Regimen
20 – 30	2mg/kg 24hrly
15 – 20	2mg/kg 48hrly
Haemodialysis	2mg/kg 48hrly
< 15	Seek alternative antibiotic

Prescribe dose:
5mg/kg (pregnancy booking weight)

If **BMI >30** at booking, use **corrected** body weight

Check level between 20-24 hours of starting treatment

If levels not back, give 2nd dose and chase levels.

Check level between 20-24 hours of starting treatment

Is the level <1mg/L?

NO

DO NOT give another dose. Re-check level after 12 hours.

YES

Continue treatment

MONITOR GENTAMICIN LEVELS
MONITOR RENAL FUNCTION

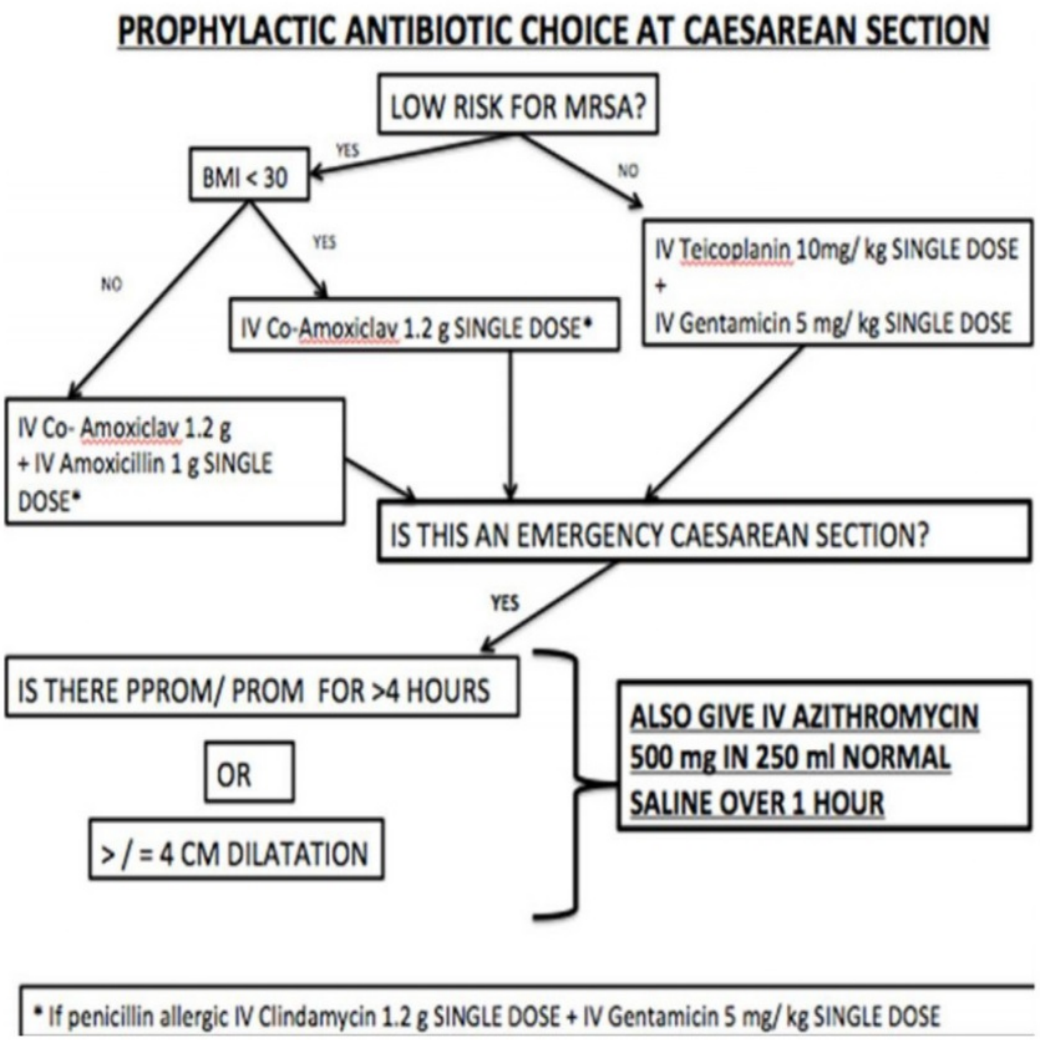
IS THE PATIENT POST-PARTUM?
Yes – refer to Adult Gentamicin Guideline

NO

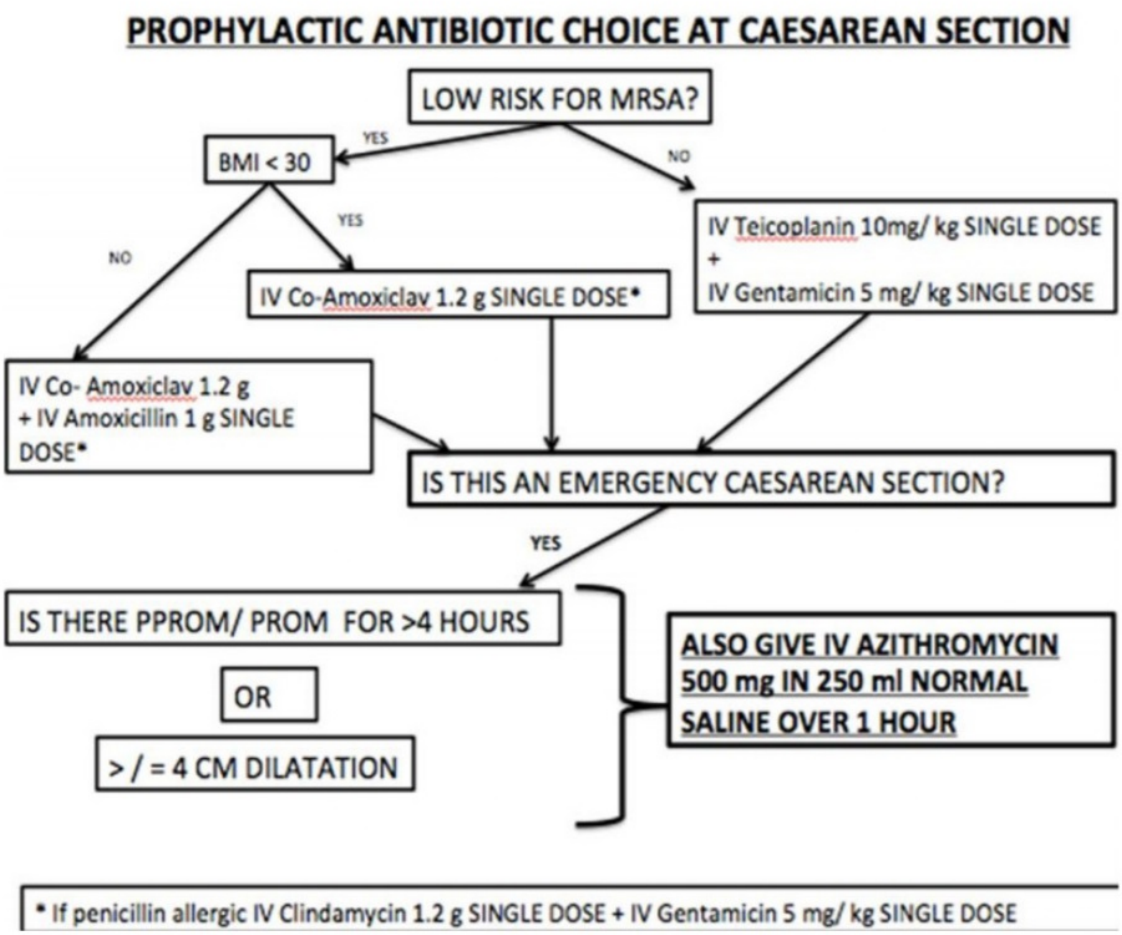
Continue treatment.
Review by Senior Obstetric Staff daily with Microbiology advice.
Monitor renal function/ototoxicity daily.
If >7 days treatment required consider referral to audiology.

Advice:
On Call Microbiologist: via Switchboard
Antimicrobial Pharmacist bleep: 40318
Clinical Pharmacist: bleep number on ward

Prophylactic antibiotic choice at Caesarean section



Prophylactic antibiotic choice at Caesarean section



Antibiotics

I. Prophylactic

1. Elective operations in the clean, clean-contaminated or contaminated categories.
2. Emergency operations in the clean & clean-contaminated operations e.g. emergency CS.

II. Therapeutic

Emergency operations with contaminated or dirty wounds

Microorganisms Source

1. Skin
2. Vagina .

Types:

1. Usually aerobic gram-positive cocci: staphylococci

2. Fecal flora: anaerobic bacteria, gram-negative anaerobes when incisions are made near the perineum or groin.

Incidence

Depends upon: Type of surgery Patient risk factors & Hospital antimicrobial practices

Most common surgical complication 5 % of operations 70% of nosocomial infections.

Risk factors

1. Host Factors □

Older age □ Obesity □ Malnutrition □ Diabetes mellitus □ Immunocompromising diseases or therapies □ other infections □ Skin diseases

2. Preoperative Factors □

Prolonged pre-op stay □ Shaving the skin □ Inadequate antibiotic prophylaxis

3.Surgical Factors

• Inadequate skin antisepsis • Emergency procedure • Prosthetic implants • Prolonged procedure • Use of drains • Poor technique • Unexpected contamination

4. Environmental Factors

• Staph. or Strep. carrier • Excessive activity in OR • Contaminated antiseptics • Inadequate ventilation • Inadequately sterilized equipment.

Prevention

Before

Remove hair by clipping, not shaving, immediately before operation

Aseptic technique by operating room team

During

• Limit sutures and ligatures

• Monofilament sutures

• Closed suction rather than open drainage; use no drainage if possible.

• Meticulous skin closure

• High intraoperative and postoperative inspired oxygen

• Normothermia during operation

Definition

Use of antibiotics before contamination or infection. Peri-operative &/or intra-operative administration of antibiotics to reduce the risk of SSI.

Objectives

- Reduce incidence of SSI
- Reduce the effect of antibiotics on the normal bacterial flora
- Reduce adverse effects

1. Use effective & appropriate antibiotics.
2. Minimal change in host defenses.
3. Augment host defense mechanisms at the time of bacterial invasion, thereby decreasing the size of the inoculum.

Prophylactic antibiotics is an adjunct to and not a substitute for good surgical technique.

Risks

- Allergic reactions (from minor skin rashes to anaphylaxis)
- Pseudomembranous colitis Diarrhea: 3-30%
- Induction of bacterial resistance {prolonged use}. Repeated doses are not recommended
- Nausea, vomiting, and/or abdominal pain
- Uncommon & rarely serious with single dose therapy

Administration

TYPE:

An appropriate prophylactic antibiotic

1. Effective against the common microorganisms anticipated to cause infection. Need not eradicate every potential pathogen. Not be routinely used for treatment of serious infections.
2. No adverse effect on the microbial flora
3. Adequate local tissue levels.
4. Minimal side effects.
5. Inexpensive.
6. Be administered for short duration

Cephalosporins

- Drug of choice for most operative procedures

{Broad antimicrobial spectrum Low allergic reaction Low side effects}

- Cefazolin 1g is the most commonly used agent
  {Long ½ life 1.8 h Low cost Equivalent to other cephalosporins}

Agents not recommended for prophylaxis

- 3rd generation cephalosporins (Cefotaxime, Ceftriaxone, Cefoperazone, Ceftazidime or Ceftizoxime)
- 4th generation cephalosporins: e.g. cefepime

Reasons:

- Expensive
- Some are less active than 1ST generation against staphylococci
- Non-optimal spectrum of action (activity against organisms not commonly encountered in elective surgery)
- Widespread use for prophylaxis encourages emergence of resistance.
- Patients with penicillin allergy are at increased risk of allergy to beta-lactam antibiotics.

An alternative: Clindamycin, IV, 150 mg 6 hourly for 2–3 doses

Time

{Only a narrow window of antimicrobial effectiveness}:

Antibiotics be administered shortly before or at the time of bacterial inoculation (when the incision is made, the vagina is entered, or the pedicles are clamped).

A delay of only 3 h: ineffective prophylaxis.

- Preoperatively (ideally within 30 min of induction of anesthesia or immediately before) or
- During the procedure {Tissue levels should peak when the knife goes in}
- During CS: prophylaxis should be delayed until the cord is clamped {prevent the drug reaching the neonate}

Route

IV {oral & IM are unreliable}

Dose & duration

Single dose Same therapeutic one, governed by the patient's weight.

e.g Cephalosporin (Cefazolin)

<= 70 kg: 1 g

>70 kg: 2 g

Additional intra-operative dose only when:

* long procedures (> 2-3 h)
* high blood loss (>1500 ml)

Keep post-operative doses to a minimum

Further doses Up to 48 h for selected procedures

{Operative doses adequate for most procedures}

Indications

Use antibiotic when the risk of infection is high or sequalae is significance

• Highly recommended: Prophylaxis unequivocally reduces major morbidity, reduces hospital costs and is likely to decrease overall consumption of antibiotics

• Recommended: Prophylaxis reduces short-term morbidity but there are no RCTs that prove that prophylaxis reduces the risk of mortality or long-term morbidity. However, prophylaxis is highly likely to reduce major morbidity, reduce hospital costs and may decrease overall consumption of antibiotics.

• Recommended but local policy makers may identify exceptions: Prophylaxis is recommended for all patients, but local policy makers may wish to identify exceptions, as prophylaxis may not reduce hospital costs and could increase consumption of antibiotics, especially if given to patients at low risk of infection.

• Not recommended: Prophylaxis has not been proven to be clinically effective and as the consequences of infection are short-term morbidity, it is likely to increase hospital antibiotic consumption for little clinical benefit.

Obstetrics Indications

1.CS
2.Operative vaginal delivery
3.Cardiac conditions
4.PTL
5.Pretem ROM
6.ROM at term
7.In 2nd or 3rd trimester
8.Asymptomatic bacteriuria
9.Incomplete abortion

10.Cervical cerclage

Cessarian Section:

A. High risk

B. Membrane rupture labor Inadequate preoperative cleansing.

Duration > one h high blood loss. {Reduce: postpartum endometritis wound infection febrile morbidity, UTI}

•All high-risk patients should receive prophylaxis with narrow-spectrum antibiotics such as cephalosporin.

B. Low risk: Although the evidence is inconclusive, prophylactic antibiotics are recommended.

1st & 2nd generation cephalosporins and Augmentin have similar efficacy. Despite the theoretic need to cover gram-negative & anaerobic organisms, studies have not demonstrated a superior result with broad-spectrum antibiotics compared with 1st & 2nd generation cephalosporins (The Cochrane Library, 2004)

•Both ampicillin & 1st generation cephalosporins have similar efficacy

•A multiple dose regimen for prophylaxis appears to offer no added benefit over a single dose regimen

•Systemic & lavage routes of administration appear to have no difference in effect.

Elective & non-elective

{The reduction of endometritis by 2/3 to 3/4 & decrease wound infections}: justifies prophylactic antibiotics.w

Operative vaginal delivery (vacuum or forceps) {Reduction in endomyometritis but not reach statistical significance (the relative risk reduction was 93%). The data were too few and of insufficient quality} to make any recommendations.

Cardiac patients:

- Prosthetic cardiac valves,
- Previous bacterial endocarditis
- Complex cyanotic congenital cardiac malformations
- Surgically constructed systemic pulmonary shunts or conduits
- Uncomplicated delivery: prophylaxis for bacterial endocarditis is optional.
- Complicated delivery by intra-amniotic infection:

  Prophylactic antibiotics are recommended Given shortly before delivery (within 30 min) & should not be given for more than 6-8 h.

- Ampicillin, 2 g IM or IV, plus Gentamicin, 1.5 mg/ kg

(not to exceed 120 mg); 6 hours later, ampicillin, 1 g IM/IV, or amoxicillin, 1 g orally)

• Patients allergic to ampiclin / amoxicillin Vancomycin, 1 g IV over 1-2 h, plus Gentamicin, 1.5 mg/ kg IV/IM

Preterm labor with intact membranes

{Reduction in maternal infection No benefit or harm for neonatal outcomes Concerns about increased neonatal mortality for those who received antibiotics}.

This treatment cannot be currently recommended for routine practice.

Premature rupture of membranes:

• {Reduction in: chorioamnionitis numbers of babies born within 48 h & 7 d. Neonatal morbidity: neonatal infection, use of surfactant, oxygen therapy, and abnormal cerebral ultrasound scan Prolonged latency does not necessarily result in improved neonatal outcomes. Concern about resistant bacteria} assess the risks & benefits for each patient (ACOG,2003).

Prelabour rupture of membranes at or near term:

Routine use of antibiotics in pPROM.

Co-amoxiclav should be avoided {increased risk of neonatal necrotising enterocolitis}. Erythromycin is a better choice

In the 2nd or 3rd trimester:

•In unselected women: reduction in Pre labor ROM. •Previous PTL: Reduction of low birth wt & postpartum endometritis. •Previous PTL & bacterial vaginosis: Reduction in PTL •Previous PTL & without bacterial vaginosis: No reduction in PTL.

The Effect of Second-Trimester Antibiotic Therapy on the Rate of Preterm Birth",

The effect of Second trimester Antibiotic Therapy on rate of Preterm birth is a systematic review involving over 1800 women deemed at a higher risk for preterm delivery, comparing the rate of preterm birth between those given antibiotics and those given placebo. Clindamycin or antibiotics belonging to a group called macrolides during their second trimester were less likely to undergo preterm labour than those given a placebo. Metronidazole were more likely to undergo preterm labour than those given placebo. metronidazole should be avoided for higher risk women in the second trimester of pregnancy.

•Vaginal antibiotic prophylaxis:

No prevention of infectious pregnancy outcomes & a possibility of adverse effects such as neonatal sepsis Antibiotic prophylaxis given during 2nd or 3rd trimester reduces the risk of prelabour ROM when given routinely. Beneficial effects on birth wt & the risk of postpartum endometritis were seen for high risk women.

Asymptomatic bacteriuria

•Clearing asymptomatic bacteriuria. {Reduction in the incidence of: preterm delivery low birth weight babies Pyelonephritis} (small F. The Cochrane Library, Issue 3, 2004).

Incomplete abortion.

{No differences in post abortal infection rates with routine prophylaxis or control. No enough evidence to evaluate a policy of routine antibiotic prophylaxis to women with incomplete abortion}.

Cervical cerclage (prophylactic or emergency)

Evidence is insufficient to recommend antibiotic prophylaxis (ACOG,2003).

Gynecological Indications:

1. Hysterectomy
2. Laparoscopy, Laparotomy
3. HSG
4. Sono hysterography
5. Hysteroscopy
6. IUCD
7. Endometrial biopsy
8. Surgical Abortion
9. Preoperative Bowel Preparation
10. Endocarditis Prophylaxis
11. Bladder catheterization
12. Recurrent UTI

Hysterectomy:

Abdominal, vaginal, laparoscopically assisted {Bacterial vaginosis is a risk factor for SSI after hysterectomy: Metronidazole for at least 4 days, beginning just before surgery, significantly reduces vaginal cuff infection in patients with abnormal flora.

54. Single dose of antibiotics (ACOG, 2006). No particular regimen to be superior to any other. Cefazolin 1-2 g single dose, iv Cefotaxime 2 g single

dose, iv Metronidazole 1g IV single dose Tinidazole 2 g single oral dose (4-12 h before surgery)

Laparoscopy and Laparotomy:

{do not breach surfaces colonized with vaginal bacteria infections more often result from contamination with skin bacteria. No studies recommend antibiotic prophylaxis in abdominal surgery that does not involve vaginal or intestinal procedures}: Antibiotic prophylaxis is not indicated for diagnostic laparoscopy.

HSG:

{Postoperative PID is an uncommon but potentially serious complication. Patients with dilated fallopian tubes are at greater risk}. Antibiotic prophylaxis is not recommended with no history of pelvic infection. Dilated fallopian tubes: 100 mg of doxycycline twice daily for 5 d. History of pelvic infection: doxycycline before the procedure & continued if dilated fallopian tubes are found.

Sono hysterography

{Rates of post procedure infection are low. The risks are similar to those of HSG}: Same considerations

Hysteroscopy

{Infectious complications after hysteroscopic surgery are uncommon (0.18 to 1.5%). Amoxicillin/clavulanate (Augmentin): no significant difference in postoperative infection}. ACOG does not recommend routine antibiotic prophylaxis.

IUD Insertion

{Most of IUD-related infection occurs in the first few weeks to months after insertion: contamination of the endometrial cavity during the procedure is the infecting mechanism. PID is uncommon after IUD insertion regardless of whether antibiotic prophylaxis is used. A Cochrane review: doxycycline (Vibriamycin) or azithromycin (Zithromax) before IUD insertion confers little benefit. ACOG: no benefit with negative screening results for gonorrhea & chlamydia.

Endometrial biopsy

{Incidence of infection is thought to be negligible} ACOG: No antibiotic prophylaxis.

Surgical Abortion/D&C

{periabortal antibiotics had a 42% overall decreased risk of infection}. ACOG: antibiotic prophylaxis is effective, regardless of risk.

Doxycycline: 100 mg orally 1 h before procedure & 200 mg after procedure
Metronidazole: 500 mg orally twice daily for 5 d

Preoperative Bowel Preparation Surgery that may involve the bowel:

1. Mechanical bowel preparation without oral antibiotics and
2. Broad-spectrum parenteral antibiotic (Cefoxitin) immediately before surgery.

Endocarditis Prophylaxis

Recommended High-Risk Category Prosthetic cardiac valves Previous bacterial endocarditis Complex cyanotic congenital heart disease Surgically constructed systemic pulmonary shunts or conduits Moderate-Risk Category Most other congenital cardiac malformations (other than those listed above & below) Acquired valvar dysfunction (eg, rheumatic heart disease) Hypertrophic cardiomyopathy Mitral valve prolapse with valvar regurgitation, thickened leaflets, or both.

Negligible-Risk Category (Risk No GreaterThan That of the General Population) Isolated secundum atrial septum defect Surgical repair of atrial septal defect, ventricular septal defect, or patent ductus arteriosus (without residua beyond 6 m) Previous coronary artery bypass graft surgery Mitral valve prolapse without valvar regurgitation Physiologic, functional, or innocent heart murmurs Previous Kawasaki syndrome without valvar dysfunction Previous rheumatic fever without valvar dysfunction Cardiac pacemakers (intravascular and epicardial) & implanted defibrillators.

Endocarditis Prophylaxis by Surgical Procedure Endocarditis Prophylaxis Recommended Gastrointestinal Tract* Surgical operations that involve intestinal mucosa Genitourinary Tract Cystoscopy Urethral dilation Other genitourinary procedures only in presence of infection *Prophylaxis is recommended for high-risk patients; optional for medium-risk patients.

Endocarditis Prophylaxis Not Recommended Genitourinary Tract Vaginal hysterectomy** Urethral Catheterization Uterine Dilation and Curettage Therapeutic Abortion Sterilization Procedures Insertion or Removal of IUCD Prophylaxis is optional for high-risk patients.

Patient Agent s Regimen High- risk Ampicillin plus gentamicin Ampicillin, 2 g 1M or IV, plus gentamicin, 1.5 mg/kg (not to exceed 120 mg) within 30 min of starting the procedure; 6 h later, ampicillin, 1 g 1M/IV, or amoxicillin, 1 g.

Bladder catheterization

{low risk of infection}, antibiotic prophylaxis is not indicated.

The following recommendations and conclusions are based on good and consistent scientific evidence (Level A)

•Patients undergoing abdominal or vaginal hysterectomy should receive single-dose antimicrobial prophylaxis.

•PID complicating IUD insertion is uncommon. The cost-effectiveness of screening for gonorrhea and chlamydia before insertion is unclear; in women screened and found to be negative, prophylactic antibiotics appear to provide no benefit.

•Antibiotic prophylaxis is indicated for suction curettage abortion.

•Antibiotic prophylaxis is indicated for suction curettage abortion.

•Appropriate prophylaxis for women undergoing surgery that may involve the bowel includes a mechanical bowel preparation without oral antibiotics and the use of a broad-spectrum parenteral antibiotic, given immediately preoperatively.

•Antibiotic prophylaxis is not recommended in patients undergoing diagnostic laparoscopy.

The following recommendations and conclusions are based on limited or inconsistent scientific evidence (Level B):

• In patients with no history of pelvic infection, HSG can be performed without prophylactic antibiotics. If HSG demonstrates dilated fallopian tubes, antibiotic prophylaxis should be given to reduce the incidence of post-HSG PID.

•Routine antibiotic prophylaxis is not recommended in patients undergoing hysteroscopic surgery.

•Cephalosporin antibiotics may be used for antimicrobial prophylaxis in women with a history of penicillin allergy not manifested by an immediate hypersensitivity reaction.

•Patients found to have preoperative bacterial vaginosis should be treated before surgery.

The following recommendations and conclusions are based primarily on consensus and expert opinion (Level C):

•Antibiotic prophylaxis is not recommended in patients undergoing exploratory laparotomy.

•Use of antibiotic prophylaxis with saline infusion US should be based on clinical considerations, including individual risk factors.

•Patients with high- and moderate-risk structural cardiac defects undergoing certain surgical procedures may benefit from endocarditis antimicrobial prophylaxis.

Bharath Institute of Higher Education and Research

Sri Lakshmi Narayana Institute of Medical Sciences

Participant list of Value added course **Antibiotics in Obstetrics and Gynaecology**

S.No	Register No	Students List	Sign
1	U14MB241	DINESHKUMAR. K	
2	U14MB242	DINESH. B	
3	U14MB243	DINESH. M	
4	U14MB244	DINESH.S	
5	U14MB245	DIVYA .M	
6	U14MB246	GAUTHAM. B	
7	U14MB247	GOKUL. S	
8	U14MB248	GUBENDIRAN. R.	
9	U14MB249	HARIJAN BALASUBRAMANIAM KANNADASAN	
10	U14MB250	HEMALATHA. K	
11	U14MB251	HEMANTHKUMAR.T	
12	U14MB252	HEMASH. P.A	
13	U14MB253	HEMASRI. C	
14	U14MB254	ILAMMATHI. K	
15	U14MB255	JEEVAHASHINI. S	
16	U14MB256	JAYAPRIYA.J	
17	U14MB257	JAYACHANDRAN. G	
18	U14MB258	JIMS SAMGODWIN. S	
19	U14MB259	KABITH VAJAN.A	
20	U14MB260	KARPAGAM.S	

ANTIBIOTICS IN OBSTERICS AND GYNECOLOGY

MULTIPLE CHOICE QUESTIONS

1. Asymptomatic Bacteriuria refer to presence of _____ CFU/ ml of bacteria in MSU in absence of symptoms of UTI

A) $\geq 10^3$ B) $\geq 10^4$ C) $\geq 10^5$ D) $\geq 10^6$

2. **Hematuria defined as presence of _____ RBCs/mm^2 in urine**

A) >1 B) >2 C) >3 D)>4

3. **Modified Early Obstetric Warning Score refers to screening tool used for _____**

A) Hypertension B) Maternal sepsis C) Coma D) Seizures

4. **EOGBS is defined as GBS infection with onset _____ hours of birth**

A) 12 hrs B) 72 hrs C) 96 hrs D) 24 hrs

5. **Drug of choice for trichomonas vaginalis**

A) Metronidazole B) Penicillin C) Ofloxacin D)Clindamycin

6. **Intra-amniotic infection (IAI) or chorioamnionitis refers to infection of……**

A) Mother B) both mother and fetus C) fetus D) none

7. **Drug of choice for most operative procedures**
A) Penicillins B) Cephalosporins C) Macrolides C) Quinolones

8. ……refers to presence of white cells (pus cells) in urine specimen ?

A) Hematuria B) Pyuria C) Nocturia D) Proteniuria

9. ……is defined as the peri-procedural administration of a single therapeutic IV dose of an antimicrobial agent

A) SAMP B) MRSA C) DOTS D) NONE OF THE ABOVE

10. ……. is first drug of choice in APN ?

A) Ampilicin B) Temocilin C) Gentamycin D) Ofloxacin

ANTIBIOTICS IN OBSTERICS AND GYNECOLOGY

MULTIPLE CHOICE QUESTIONS (6)

9/10

1. **Asymptomatic Bacteriuria refer to presence of _____ CFU/ ml of bacteria in MSU in absence of symptoms of UTI**

REG NO - U14MB259

A) $\geq 10^3$ B) $\geq 10^4$ C) $\geq 10^5$ D) $\geq 10^6$

2. **Hematuria defined as presence of _____ RBCs/mm^2 in urine**

A) >1 B) >2 C) >3 D)>4

3. **Modified Early Obstetric Warning Score refers to screening tool used for _____**

A) Hypertension B) Maternal sepsis C) Coma D) Seizures

4. **EOGBS is defined as GBS infection with onset _____ hours of birth**

A) 12 hrs B) 72 hrs C) 96 hrs D) 24 hrs

5. **Drug of choice for trichomonas vaginalis**

A) Metronidazole B) Penicillin C) Ofloxacin D)Clindamycin

6. **Intra-amniotic infection (IAI) or chorioamnionitis refers to infection of.....**

A) Mother B) both mother and fetus C) fetus D) none

Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)

CERTIFICATE OF MERIT

This is to certify that **HEMANTH KUMAR.T** has actively participated in the Value Added Course on **Antibiotics in Obstetrics and Gynecology** held during March 2022 – May 2022 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

RESOURCE PERSON

ASSISTANT PROFESSOR
DEPT. OF OBSTETRICS & GYNAECOLOGY
Sri Lakshmi Narayana Institute of
Medical Sciences
OSUDU, PUDUCHERRY.

COORDINATOR

DEAN
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, AGARAM VILLAGE,
KOODAPAKKAM POST,
PUDUCHERRY - 605 502

Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

(Deemed to be University under section 3 of the UGC Act 1956)

CERTIFICATE OF MERIT

This is to certify that **GUBENDIRAN. N** has actively participated in the Value Added Course on **Antibiotics in Obstetrics and Gynecology** held during March 2022 – May 2022 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

RESOURCE PERSON

ASSISTANT PROFESSOR
DEPT. OF OBSTETRICS & GYNAECOLOGY
Sri Lakshmi Narayana Institute of
Medical Sciences
OSUDU, PUDUCHERRY.

COORDINATOR

DEAN
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, AGARAM VILLAGE,
KOODAPAKKAM POST,
PUDUCHERRY - 605 502

Annexure 4

Course/Training Feedback Form

Course:
Date:
Name:
Reg NO.
Department: Obstetrics and Gynaecology

Q 1: Please rate your overall satisfaction with the format of the course:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 2: Please rate course notes:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 3: The lecture sequence was well planned

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 4: The lectures were clear and easy to understand

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 5: Please rate the quality of pre-course administration and information:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 6: Any other suggestions:

Comments:

Thank you for taking the time to complete this survey, your comments are much appreciated.

OPTIONAL Section: Name _____
Signature _____ Date _____

Annexure 4

Course/Training Feedback Form

Course: ANTIBIOTICS IN OBSTETRICS AND GYNECOLOGY

Name: KABITH VAJAN · A
Reg NO. U14MB259
Department: Obstetrics and Gynaecology

Q 1: Please rate your overall satisfaction with the format of the course:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 2: Please rate course notes:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 3: The lecture sequence was well planned

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 4: The lectures were clear and easy to understand

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 5: Please rate the quality of pre-course administration and information:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 6: Any other suggestions: NILL

Comments:

Thank you for taking the time to complete this survey, your comments are much appreciated.

***OPTIONAL Section*:** Name _____
Signature _____ Date _____

Annexure 4

Course/Training Feedback Form

Course: ANTIBIOTICS IN OBSTETRICS AND GYNECOLOGIY

Name: GOKUL'S
Reg NO. U14MB247
Department: Obstetrics and Gynaecology

Q 1: Please rate your overall satisfaction with the format of the course:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 2: Please rate course notes:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 3: The lecture sequence was well planned

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 4: The lectures were clear and easy to understand

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 5: Please rate the quality of pre-course administration and information:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 6: Any other suggestions: NILL

Comments:

Thank you for taking the time to complete this survey, your comments are much appreciated.

OPTIONAL Section: Name _____
Signature _____ Date _____

Date: 24.05.2022

From
Dr. Ambigai Meena
Professor and HOD
Obstetrics and Gynaecology,
Sri Lakshmi Narayana institute of Medical sciences,
Bharath Institute of Higher Education and Research,
Chennai.

Through Proper Channel

To
The Dean,
Sri Lakshmi Narayana institute of Medical Sciences,
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Completion of value-added course: Antibiotics in Obstetrics and Gynaecology

Dear Sir,

With reference to the subject mentioned above, the department has conducted thevalue-added course titled: **Antibiotics in Obstetrics and Gynaecology** on MARCH 2022-MAY 2022. We solicit your kind action to send certificates for the participants, that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards

Dr. Ambigai Meena
PROFESSOR & HEAD
DEPT. OF OBSTETRICS & GYNAECOLOGY
Sri Lakshmi Narayana Institute of
Medical Sciences
OSIUDU, PUDUCHERRY.

Encl: Certificates

Photographs

VALUE ADDED COURSES

OBGY 6 ANTIBIOTICS IN OBSTETRICS AND GYNAECOLOGY