EVALUATIONOFPROPHYLACTICANTIBIOTICUSEINSECTIOCAESAREAPATIENTS ATMINTOHARDJONAVALHOSPITAL

ABSTRACT

Aims: The main aim of this research is to determine the appropriateness of using prophylactic antibioticsinSectioCaesareapatientsatMintohardjoNapalHospital(RSALMintohardjo)in2020
Methodology: This study is a non-experimental research study with a descriptive, retrospective design. Ituses medical record data of patients who gave birth using SC surgery in 2020 at RSAL Mintohardjo andwere given prophylactic antibiotics. The population of this study is all medical record data of mothersgiving birth by SC at RSAL Mintohardjo in 2020. The sampling technique is total sampling where thenumberofsamplesisthesameasthepopulation.
Results: The results of the evaluation of the appropriateness of prophylactic antibiotic use based on fivecategorieswithassessmentstandardsbasedonPOGI(IndonesianAssociationofObstetricsandGynecology) guidelines show that of the 58 research samples, there were 58 samples (100%) that wereappropriate for use based on indications where the samples were patients who were going to undergosurgery. , with clean and contaminated operating classes. However, based on the exact type and class ofdrug, it was found that all samples did not meet POGI guidelines; Likewise, evaluation of the right dose,rightrouteandrighttimecould not be carried out because all research samples did not pass theevaluationoftherighttypeofdrugaccordingtotheguidelinesissuedbyPOGI.
Conclusion: The percentage of accuracy in administering and using prophylactic antibiotics at RSALMintohardjo is 100% correct indication, however there is no correct type of drug, right dose, right routeandrighttimebasedontheguidelinesforprophylacticantibioticsinsurgerypublishedbyPOGI.

Keywords:Evaluation,ProphylacticAntibiotics,SectioCaesarea

1. INTRODUCTION

One of the problems that threatens global public health, including Indonesia, is antimicrobial resistance. Antibiotics areantimicrobials [1]. Data from the Centers for Disease Control and Prevention (CDC), there are 25,000 deaths per year inEurope, there are 58,000 deaths per year in India, and there are 58,000 deaths per year in Thailand, where all of thesedeaths are caused by antibiotic resistance [2]. Apart from this data, according to Antimicrobial Resistance in Indonesia(AMRIN) at the Dr. Soetomo Regional General Hospital (RSUD), Surabaya, and the Central General Hospital (RSUP) Dr.Kariadi, Semarang, Methicillin Resistant Staphylococcus aureus (MRSA), and Extended Spectrum Beta-Lactamases(ESBL) were found [3]. Apart from that, in the Intensive Care Unit (ICU) of the Fatmawati Hospital, Jakarta has found thatStaphylococcus epidermidis, Enterobacteraerogenes, Pseudomonas aeroginosa, Klebsiellasp, and Serratiamarcescensbacteria are resistant to the antibiotic ceftriaxone [4]. One of the causes of microbial antibiotic resistance is the unwiseprescribing and use of antibiotics [1]. Sectiocaesarea (SC) is surgery on the abdominal wall and uterus to give birth to achild [5]. The World Health Organization (WHO) recommends that the ideal rate of SC is 10-15%. However, the incidenceof SC continues to increase.5 The incidence of SC deliveries in Indonesia in 2013, according to Basic Health Research(RISKESDAS), was 9.8% and increased in 2017 to 17% from data from the National Population and Family PlanningAgency(BKKBN)[6].

The risk of complications is five times higher in SC delivery than in normal delivery [7]. One of the complications found inSC delivery is a Surgical Wound Infection (ILO) [5]. Prevention of ILO is done by administering prophylactic antibiotics andhasbeenproventobeeffectiveinreducingtheriskofILO by 30-65% [5,8]. Research on evaluating the use ofprophylactic antibiotics, from research at RSUD dr. SoediranMangunSunarsoWonogiri by Hapsari (2017) stated that0.6% of the administration and use of prophylactic antibiotics was not the right drug, and 0.6% was not the right dose.prophylactic antibiotics that are not in the correct dosage, incorrect name and class, and incorrect duration is 100% whencompared with the Regulation of the Minister of Health (Permenkes) of the Republic of Indonesia (RI) Number 2406 of2011 concerning guidelines for the use of antibiotics, and when compared with the guidelines for use antibiotics at UlinDistrict Hospital, Banjarmasin, there were 30% of surgical procedures for section cesarean surgery that did not have thecorrect duration of administration [9]. These results show that there are still cases of inappropriate use of prophylacticantibioticsinSC operations. This basis is what prompted the author to conduct research on evaluating the use ofprophylactic antibiotics in Sectiocaesarea operations at the Mintohardjo Naval Hospital (RSAL) in 2020 based on theGuidelinesforProphylacticAntibioticsinObstetric-GynecologicalSurgeryissuedbytheIndonesian Obstetrics andGynecologyAssociation(POGI)in2013.

ReasearchProblem

How appropriate is the use of prophylactic antibiotics in SC surgery patients at RSAL Mintohardjo in 2020 with POGIguidelines based on 1) Precise indication, 2) Correct type and class of drug, 3) Correct dosage, 4) Exact route and 5)punctual.

Researchpurposes

Generalpurpose

Knowingtheappropriatenessofprophylacticantibioticsin SectioCaesareaoperationsatRSALMintohardjoin2020.

Specialpurpose

Knowing the accuracy of use (suitable indication, right type and class of drug, correct dose, right route, and right time) ofprophylacticantibioticsinSCpatientsatRSALMintohardjoin2020

2. MATERIALANDMETHODS

The research design is a non-experimental study with a descriptive design using medical record data of patients who gavebirthusingSCsurgeryin2020whoweregivenprophylacticantibioticsfromApril2021toApril2022atRSALMintohardjo locatedonJalanBendunganHilirnumber17A,RT4,RW3,TanahAbangDistrict,CentralJakartaCity,SpecialCapital RegionofJakarta.

ResearchPopulation

Thisstudy'spopulationincludesallmedicalrecordsofmotherswhogavebirthtoSCatRSALMintohardjoin2020.

ResearchSample

Samplingwascarriedoutbytotalsampling;namely,thenumberofsampleswasthesameasthepopulation.

InclusionandExclusionCriteriaInclusion

Criteria

- MothergavebirthbyCSduringthatperiod
- Maternitymotherswhoreceiveprophylacticantibiotics.

ExclusionCriteria

- Incompletedataonrecordsofmothersgivingbirthby CS.
- Maternitywomenreceivingantibioticsduetodiagnosedinfection

Datacollection

Datawascollectedbyexaminingsecondarydata,namelyallmedicalrecordsofpatientsregisteredatRSALMintohardjoin 2020. Data collected included age, educational status, employment, history of parity, history of SC, history of previousillnesses, and indications for SC data. Prophylactic antibiotics include patient diagnosis, type, dose, interval, route, andtimeofadministrationofprophylacticantibiotics.

ResearchInstrument

1. MedicalrecordsofpatientswhogavebirthbySCinJanuary–December2020.
2. GuidetoProphylacticAntibioticsinObstetricsandGynecologySurgery,POGI2013.

DataProcessingandAnalysisDataProcessing

1. Editing
   Thedatainthe formofmedicalrecordswillbeeditedfirstsothatthedataobtaineddoesnotfindanyincompleteness(missingdata).
2. Coding
   Thedataobtainedandeditedwillthenbeconvertedintonumbersornumbersusingacodingprocess.
3. Entry
   Thedatapresentedinnumbersorfigureswillbeenteredintocomputersoftware.
4. Cleaning
   Cleaningactivitiesaredonebycheckingagainandensuringnoerrorsinenteringdata.

Dataanalysis

Data analysis was done by analyzing research results on using prophylactic antibiotics in SC surgery patients with theGuide to Prophylactic Antibiotics in Obstetric-Gynecological Surgery, POGI, in 2013. Data analysis was carried out todescribe the frequency distribution of each variable; this analysis will produce data in the form of percentages anddescriptionsordescriptivedata.Afterobtainingtheresultsofthefrequency distribution of the variables, it will becontinuedwithatypeofanalysisoftheaccuracyofusingprophylacticantibiotics.

1. Patientcharacteristics
   Data analysis on the number of patients who underwent SC surgery based on maternal age, education, occupation,number of parties, history of SC, indications for SC, history of previous illnesses, duration of surgery, and amount ofbleeding.
2. Patternofprophylacticantibioticuse
   Data analysis of the number of patients undergoing SC surgery is based on the type and class of antibiotics, antibioticdose,route,andadministrationtime.
3. Theanalysistechniqueforevaluatingtheuseofprophylacticantibioticsiscarriedoutusingtheformula:
   Percentage(%)ofappropriateuseofprophylacticantibiotics:Numberofappropriatecases(indication,typeandgroup,dose,

3. RESULTSAND DISCUSSION

Research carried out in the medical records room at RSAL Mintohardjo Jakarta in December 2021 found 58 cases ofgiving birth using the SC method and receiving prophylactic antibiotics. Data taken by total sampling was then selectedusing inclusion and exclusion criteria, and 58 cases were obtained, or all cases could be used as research samples.Patientdatacollectedinthisstudyincludedage,education,occupation, parity, history of having performed a CS,indications for having an SC, history of previous illnesses, duration of surgery, and amount of bleeding during surgery, aswellasalistofprophylacticantibioticuse(typeandclassofantibiotics,dosage,route of administration, time ofadministration),thenanalyzedtolookforpatientcharacteristics,patternsof antibiotic use, and appropriateness ofprophylacticantibioticuse.

PatientCharacteristics

The characteristics of the patients in this study were examined in terms of age, occupational education, parity, history ofhavingaCS,indications for having an SC, history of previous illnesses, duration of surgery, and amount of bleedingduring surgery. Tables 1, 2, 3, and 4 show the analysis results of SC patients' characteristics at RSAL Mintohardjo Jakartain2020.

Table1.GeneralCharacteristicsofSCPatientsatRSALMintohardjoin2020

Characteristics	NumberofPatients	Percentage(%)
Age		
20-35year	36	62,1
>35year	22	37,9
Education		
JuniorHighSchool	3	5,2
SeniorHighSchool	32	55,2
Diploma	9	15,5
Bachelor	14	24,1
Job		
Housewife	35	60,3
Civilservants	8	13,8
Privatesectoremployee	10	17,2
Honorary	4	6,9
Students	1	1,7
Parity		
Nulliparous	14	24,1
1-3Times	42	72,4
>3Times	2	3,4

ThedatainTable1,showsthatthefrequencyofmothersgivingbirthusingtheSCmethodintheagegroup20yearsto 35 years was 36 people, and in the age group over 35 years, there were 22 people at RSAL Mintohardjo in 2020.According to the theory, as technology improves, this will also increase. Science so that society, in this case, parents andwomen, increasingly understand the risks and dangers of pregnancy and childbirth outside the productive age [36] Thehigh number of women who give birth using the SC method at the age of 20-35 years was also found in researchconductedbyMaelaningsihetal.37Theorysaidthatpregnancybeyondtheageof20-35yearscanendangerthemother

and baby in the process of pregnancy or giving birth because at the age of teenagers or under 20 years, the reproductivesystem of teenagers is not yet perfect so that various components that support pregnancy such as perineal musclestrengthandsizearenotyetoptimal.Anunsuitablepelviscausesprolongedlabor.Apartfromthat,inadolescence,fromapsychological perspective, they are generally not ready to become mothers and accept pregnancy [37,38]. Apart fromfertility, which decreases at the age of over 35 years, pregnancy and giving birth at this age also causes a woman to havea greater risk of experiencing obstetric diseases due to other diseases such as hypertension and diabetes [38] At the ageof40thereisapossibilityofasuccessfulpregnancy,butwhatneedstobetakenintoaccountisthatpregnancyatthisageThis has a higher risk of miscarriage considering that the mother's stamina begins to decline so she gets tired easily,besides that the quality of egg cells at that age is no longer like that of the productive age. The things above can lead totheuseoftoolssuchasforcepsandSCprocedurestoassistwithbirth[38].

The data in Table 1 shows that there are mothers with high school education 32 patients, 14 patients in the group ofmothers with bachelor's education, 9 patients in the group of mothers with diploma education, and 3 in the group ofmotherswithjunior high school education. Research conducted by Rahmawati at the AmalSehat Islamic Hospital,Sragen, stated that in mothers with low and middle education, antenatal care was more irregular, and the level of SCprocedures was higher in this group. This confirms the theory that education level is often used as an assessment.Knowledge and insight influence giving birth using the SC method [39].According to theory, this could be becausemothers who have received higher education can understand the risks that can occur during pregnancy and childbirth,considering that all pregnant women are at risk; apart from that, this group of mothers tends to be able to make decisions,and actions related to health services and problems such as being able to see access to care and visiting health servicesto detect and provide treatment for complications, as well as preparing for birth along with the most appropriate deliverymethod.[36,39,40].

Parity is the number of children a mother gives birth to, whether alive or dead. 41 This study found that most mothers whogave birth using the SC method were in the 2-3 times parity group, namely 42 patients. Apart from that, there is a group ofmothers with null parity, or who have never given birth, or in other words, this is the first time the mother has given birth;there are 14 patients in this group, and mothers with more than 3 parties, namely two patients. This study's results alignwith research conducted by Hijriani et al., which stated that the highest group of mothers who gave birth using the SCmethod were mothers who had given birth 1-3 times [40]. According to theory, the safest number of times a mother givesbirth is no more than three times due to changes in the reproductive system, such as the formation of scar tissue due torepeatedpregnancyandchildbirth,causingweakness in the uterine muscles to contract. Another theory says thatmotherswhohavenevergivenbirtharepotentiallyunpreparedandafraidofgivingbirth,therebyincreasingtheproduction of the hormone cortisol and leading to the emergence of various complications [41]. The results of this studyshowthatparityisnottheonlythingthatplaysaroleindeterminingthedeliverymethod.

Table2.PatientCharacteristicsBasedonHistoryandIndicationforCS

Characteristic	PatientNumber	Percentage(%)
SCHistory		
Yes	31	53
No	27	46,6
SCIndication		
Medical	58	100

The delivery method in the previous pregnancy greatly influences the choice of delivery method in the following deliveryprocess [42]. In this study, it was found that more mothers had a history of CS compared to mothers who did not have ahistory of CS. The number of mothers who had a history of cesarean section was 31 people, and 27 mothers who hadnever had a cesarean section before. According to the American Pregnancy Association, several factors support a motherwho has given birth using the SC method to give birth again using the same process in the subsequent pregnancy,including the problem of the disease, which was previously the reason for having an SC which is still suffered by themother who wants to give birth, the vertical shape at the time of the incision. Surgery in previous births and the distancebetween birth and previous birth was less than 18 or 24 months [43].Tampa et al. also found that former SC operationswerethemainreasonmothersintheirresearchlocationreceivedtheSCdeliverymethod[43].

Medical indications for SC are a diagnosis that provides instructions for giving birth using the SC method for the benefitand safety of the mother and baby. In contrast, non-medical indications are based on requests or things other than thepresence of factors that endanger the mother and baby [44]. In this study, 58 cases were found. Or all SC surgery casesare carried out based on medical indications. The majority of patients in this study were advised to have a CS because ofthepresenceofSCscarsfrompreviousbirths,fetalabnormalities,pelvicdisproportion, and premature rupture ofmembranes. Research conducted by Subekti found that most indications for having SC were also medical indications.Non-medical indications are starting to become more common and are usually influenced by social factors and requestsfrom mothers and families. Apart from that, the fear of the pain of vaginal delivery as well as psychological, belief, andeconomicfactorsalsoplayarole[44].ThedecisiontogivebirthusingtheSCbirthmethodmustbemadebyfully

considering the advantages and disadvantages that can occur, considering that the risks of this delivery method aregreater. Higher compared to vaginal delivery, including puerperal infection, bleeding due to uterine atony, pulmonaryembolism,anduterineruptureinthefollowingpregnancy[45].

Table3.PatientCharacteristicsBasedonPastDiseaseHistory

Characteristic	PatientNumber	Percentage(%)
Pastmedicalhistory		
Hyperthyroid	1	1,7
UterineMyoma	1	1,7
ChronicCephalgia	1	1,7
KET	1	1,7
Anemia	1	1,7
Thereisn'tany	53	94,1

In this study, the results in Table 3 showed that out of 58, 5 patients had a history of previous illness. The five patientseach had a history of diseases, namely hyperthyroidism, uterine myoma, chronic cephalgia, disturbed ectopic pregnancy(KET),andanemia.Itisimportanttoassesswhetherthereisahistoryofpreviousillness
Because it is related to the guidelines issued by POGI, which considers changing the use of beta-lactam antibiotics if thepatienthasahistoryofallergiestothisgroup[31],inthisstudy,nopatientswithahistoryofantibioticallergieswerefound.

Table4.PatientCharacteristicsBasedonOperationDurationandAmountofBleeding

Characteristic	PatientNumber	Percentage(%)
OperationDuration		
≤3Hours	58	100
AmountofBleeding		
≤1,500mL	58	100

The duration of SC surgery in this study was all under 3 hours, the duration of SC surgery plays a role in administeringantibiotics. In the guidelines issued by POGI, prophylactic antibiotics are given again for a second dose if the operationlasts more than 3 hours, because the concentration of antibiotics in the patient's body needs to be maintained in order tosuppress bacterial colonization [31]. The amount of blood wasted during SC operations at RSAL Mintohardjo in 2020 wasless than 1,500 mL for each patient, where the majority recorded that the most blood wasted was 500 mL, and the leastwastedwas200mL.Theimportanceofknowingtheamountofbloodlostistoseewhetherprophylacticantibioticsneedto be added after the first dose, because according to POGI guidelines, prophylactic antibiotics before a SC operationneedtoberepeatedifthereisbloodlossofmorethan1,500mL,becausethiscanaffecttheconcentrationofantibioticsinthe patient'sbody.andalsoaffectstheeffectivenessoftheantibiotic[31].

PatternsofProphylacticAntibioticUse

Table5.PatternsofProphylacticAntibioticUseinSCPatientsatRSALMintohardjoin2020

Group	AntibiotikType	Patient	Percentage (%)
Single			
Cephalosporingene3	Ceftriaxone	17	29,4
	Cefotaxime	1	1,7
Combination			
Cephalosporingene3 aminoglycoside	-CeftriaxoneGentamicin	38	65,5
PenicillinAminoglycosides	-AmpisilinGentamisin	1	1,7
Cephalosporin gene 3 Aminoglycosides	-SefotaksimeGentamisin	1	1,7

Forsingleprophylacticantibiotics,POGIrecommendsusingantibioticsfrom the 1st generation cephalosporin group,namelycefazolin[31],whereasaccordingtoexistingdata,thesingleantibioticusedatMintohardjoHospitalisusingthe

antibiotics ceftriaxone and cefotaxime which are 3rd generation cephalosporins. According to several sources, singleprophylacticantibioticsaregiven.Hasbeeneffectiveinpreventingpostoperativeinfections.[34,46].Prophylacticantibiotics are a combination of 2 or more antibiotics given simultaneously with the aim of broadening the spectrum andimproving the work of prophylactic antibiotics in dealing with more than one type of bacteria. 46 POGI recommendsmetronidazole together with gentamicin as a combination antibiotic, 31 but the data in table 4 is different. In this study, itwas found that the most frequently used prophylactic antibiotics were a combination of ceftriaxone from the 3rd generationcephalosporin group, and gentamicin from the aminoglycoside group. POGI does not recommend the use of 3rd and 4thgeneration cephalosporin antibiotics as prophylactic antibiotics in the field of obstetrics-gynecology because they cancause the formation of MDRO or Multi-Drug Resistant Organisms [31] Even though POGI recommends gentamicin for usetogetherwithmetronidazole,thisdoesnotmeanthatitjustifiestheuseofacombinationantibioticbetweenthird-generationcephalosporinstogetherwithgentamicin,thisisbecause3rdgenerationcephalosporinsarebroad-spectrumantibioticsthatcanwork against both gram-negative and gram-positive bacteria, and If gentamicin isgiven again, the use of combination antibiotics will not be efficient. Apart from being inefficient in terms of the antibioticspectrum of action, the use of 3rd generation cephalosporin antibiotics together with gentamicin can increase the burdenofdrugcosts;thisisverycontrarytooneof the principles for selecting prophylactic antibiotics issued by POGI andMinister of Health Regulation Number 2406 of 2011, namely affordable prices. This is the same as using ampicillin withgentamicin,consideringampicillinisabroad-spectrumantibiotic[31,32].

There are similarities between this research and the research conducted by Rahmadanti, where there was more use ofcombined prophylactic antibiotics from the 3rd generation cephalosporin class and the 1st generation cephalosporinantibiotic class. Proven to be able to help the wound healing process after SC surgery [8] and WHO issued a circularregarding the use of prophylactic antibiotics for SC surgery which states that the choice of antibiotic type is not limited to1stgenerationcephalosporinsbut must be reviewed from various things and conditions such as local germ maps,microbes. Local resistance and experience of health workers, as well as availability and price of antibiotics [51]. WHO alsorevealed that the majority of guidelines recommend using 1st and 2nd generation cephalosporin antibiotics becausetwo-thirdsofstudiesontheuseofprophylacticantibioticsinSCoperations used cephalosporin antibiotics of thisgeneration, but this does not rule out the possibility of using other classes of antibiotics in certain circumstances [34] Thechoice of antibiotic type for prophylaxis in SC at RSAL Mintohardjo, if seen from the clinical pathways issued by thehospital, is indeed appropriate, namely using ceftriaxone or cefotaxime. The hospital selects the type of antibiotic listed inthe clinical pathways for the implementation of SC based on various considerations adjusted to the hospital conditions.ThingslikethosedescribedcouldbewhyRSALMintohardjousesantibioticsoutsidetheguidelinesissuedbyPOGI.

Table6.PatternsofProphylacticAntibioticUseBasedonRouteofAdministration

Route	PatientNumber	Percentage(%)
IV	58	100

InTable6,dataarepresentedshowingthatprophylacticantibioticsforSCsurgerypatientswereadministeredintravenously in 58 patients (100%). According to POGI, the oral administration route is also not needed to continueprophylactic antibiotics that have been given intravenously [31]. The aim of administering antibiotics intravenously is toensurethattheantibioticscanquicklyreachpeaklevels[31].

Table7.PatternsofProphylacticAntibioticUseBasedonTimeofUse

Time	PatientNumber	Percentage(%)
2hoursbeforetheincision	2	3,4
15–60Minutesbeforetheincision	7	12,1
0-14Minutesbeforeincision	11	19
Afterincision	38	65,5

The time for administering prophylactic antibiotics from the results of this study is listed in table 7, where it can be seenthat more patients or 38 patients (65.5%) received prophylactic antibiotics after incision, while there were 11 patients(19%) who received antibiotics at 14-0 minutes. before incision, and in table 7 also presents data that there were 7patients (12.1%) who received prophylactic antibiotics 60-15 minutes before incision, and there were 2 patients (3.4%)whoreceivedprophylacticantibiotics2hoursbeforeincision.POGI,initsguidebookforprophylacticantibiotics,statesthat prophylactic antibiotics should be given 60-15 minutes before incision [31], which means seven patients receivedantibiotics at a time following POGI guidelines. According to WHO, recommendations for administering antibiotics duringthis time are classified as recommendations based on strong evidence [34]. According to the results of 10 studies thatwanted to know the difference in administration time of prophylactic antibiotics in SC surgery, in administration postincision or intraoperative antibiotics and post umbilical cord clamping compared with administration 15 - 60 minutes beforeincisionisindeedlowerineffectiveness,howeveradministrationofantibioticsaftertherecommendedtimeisstilleffective

and useful in certain situations such as SC surgery in emergency conditions so that there is not enough time available.Sufficienttoadministerprophylacticantibiotics. Apart from that, according to WHO, no data suggests there will beshort-term side effects in babies exposed to the recommended prophylactic antibiotics. However, the long-term sideeffectsarenotyetknown[34].

EvaluationoftheAppropriateUseofProphylacticAntibiotic

Table8.PercentageofAccuracyinUsingProphylacticAntibioticsinSCPatientsatRSALMintohardjoin2020

Accuracy of UseIndicator	ProperUse		ImproperUse	
	Amount	Percentage	Amount	Percentage(%)
Indication	58	100%	-	-
TypeofMedicine	-	-	58	100
Dose	-	-	58	100
Route	-	-	58	100
Time	-	-	58	100

Evaluation of the use of prophylactic antibiotics in SC patients begins with assessing whether the use of prophylacticantibiotics is appropriate for the indications, followed by assessing the appropriate use of the type of drug, after that theappropriatedose,appropriaterouteandappropriatetimeofadministration.Evaluationoftheuseofprophylacticantibioticswillusetheguidelinesforprophylacticantibioticsinobstetric-GynecologicalSurgeryissuedbyPOGIin2013

4. Conclusion

Based on the results of the evaluation of the use of prophylactic antibiotics in SC patients at RSAL Mintohardjo in 2020accordingtotheguidelinesforprophylacticantibioticsinobstetric - gynecological surgery issued by POGI, it wasconcluded that the administration of prophylactic antibiotics was 100% appropriate for the indications, and none of themmatched the type and class of antibiotics according to the guidelines. POGI issued, as well as the dose, route and time donotcomplywithPOGIguidelines]

ETHICALAPPROVAL

RUMKITALHealthCommissionDr.MintohardjoJakartahasprovidedtheresearchprotocolwithanethicalclearanceletternumber, namelyNo.042/EC/LKS/RSMTH/XII/2021DeclaredEthicallyEligible.

References

[1] IndonesianMinistryOfHealth.ControlOfAntmicrobialResistanceIsAWorldConcern.2021
[2] CentersforDiseaseControlAndPrevention.CentralInfographic:AntibioticResistancetheGlobalThreat.2021
[3] Rukmini R, Siahaan S, Sari Id. Analysis Of Antimicrobial Resistance Control Program Policy Implementation. HealthSystemsResearchBulletin.2019;22(2):106-116.
[4] Sagita D, Hastuti H. Antibiotic Resistance Test Against Staphylococcus Aureus Bacterial Cultures In The IntensiveCareUnit(Icu)OfYHospital,JambiCity.JournalOfHealthcareTechnologyAndMedicine.2020;6(1):301-307
[5] HardiyantiR.UseOfProphylacticAntibioticsInSectioCaesareaPatients.JournalOfHealthScienceAndPhysiotherapy.2020; 2(1):97-100.AvailableFrom:Https://Doi.Org/10.35893/Jhsp.V2i1.37
[6] FadhilahH,AuliaG,MaharaniN.LiteratureStudy Evaluation Of The Use Of Prophylactic Antibiotics In SectioCaesarea Patients. In: Continuous Proceedings; National Seminar On Research Results And Community Service;SouthTangerang:PamulangUniversity;2020[Cited2020September23];P542.AvailableFrom: Http://Openjournal.Unpam.Ac.Id/Index.Php/Senan/Article/View/9033/5734
[7] HapsariRa.EvaluationOfTheUseOfProphylacticAntibioticsInSectioCaesareaPatientsAtTheInpatientInstallationOfDr.RegionalGeneralHospital.SoediranMangunSumarsoWonogiri2016[Thesis].Surakarta:SetiaBudiUniversity;2017.
[8] BrahmanaIb,SetyawatiI.EvaluationOfTheUseOfProphylacticAntibioticsCeftriaxonInjectionAndOralCefadroxilInHealingPostSectioCaesariaWounds.Smedjour.2020;3(2):91
[9] AryzkyS,NisaH,GamalianaDY.EvaluationoftheUseofProphylacticAntibioticsinCesareanSection(SC)PatientsatUlinRegionalHospital,Banjarmasinin2017.ManuntungScientificJournal.2019;5(2):151
[10] KurniarumA.MidwiferyCareforChildbirthandNewborns.Jakarta:HealthHumanResourcesEducationCenter;2016.P.3.
[11] Nurhayati. Evaluation of Antibiotic Use After Cesarean Operation at Handayani Maternity Hospital [thesis]. Bandung:Al-GhifariUniversity.2017.
[12] FatimahS,FatmasaantiAU.AnalysisofFactorsAssociatedwithTypesofDeliveryinPregnantWomen.JournalofBiologicalMidwifery.2020;6(3):277
[13] SihotangHM,YuliantiH.FactorsthatInfluencethePostSectioCaesareaWoundHealingProcess.CareJournal.2018;6(2):176
[14] SungkarA,BasrowiRW.RisingTrendsAndIndicationsOfCaesareanSectionInIndonesia.WorldNutritionJournal.2020;4(1): 1-2
[15] Geraldy Y. Profile of Cesarean Section Delivery on Hypertension in Pregnancy Based on Maternal Outcomes at RsiaSittiKhadijahMuhammadiyahMakassaarforthePeriodDecember2018-November2019[thesis].Makassar;2020.
[16] SungS,MahdyH.CesareanSection.In:Statpearls.TreasureIsland(Fl):StatpearlsPublishing;2021.
[17] SilviraP,BestariR. Comparison of the Effectiveness of Using Types of Prophylactic Antibiotics in Sectio CaesareaPatientsatSylvaniRSU,BinjaiCity,2020.JournalofMedicalScienceandMedicalTechnology.2022;5(1):1-5.
[18] FrequentlyAskedQuestionsAboutSurgicalSiteInfections.CentersForDiseaseControlAndPrevention.CentersForDisease ControlAndPrevention;2019.DownloadedFrom:Https://Www.Cdc.Gov/Hai/Ssi/Faq_Ssi.Html
[19] NoveliaSM,SiaWS,SongwathanaP.SurgicalSiteInfectionWomanPostCaesareaSection:AnIntegrativeReview. NurseMediaJournalofNursing.2017;7(1):46-51
[20] AdityaR,Dirgagita.IdentificationofBacteriaintheSurgicalWoundsofPost-CesareanSectionPatientsintheGynecologyandObstetricsWardofUlinHospital,Banjarmasin.INAJOG.2021;9(1):380
[21] SteinerHl,StrandEA.SurgicalSiteInfectionInGynecologicSurgery:PathophysiologyAndPrevention.AmericanJournalofObstetricsAndGynecology.2017;217(2):121-128
[22] ChairaniF,PuspitasariI,AsdieRh.IncidenceandRiskFactorsforSurgicalWoundInfectionsinObstetricsandGynecologySurgeryinHospitals.JMPF.2019;9(4):281
[23] WorldHealthOrganization.GlobalGuidelinesForThePreventionOfSurgicalSiteInfection.Geneva:WHODocumentProductionServices;2018.P.11
[24] PratiwiRH.DefenseMechanismsofPathogenicBacteriaAgainstAntibiotics.Pro-LifeJournal.2017;4(3):418
[25] PratomoGS.GoddessNA.LevelofKnowledgeoftheCommunityofCentralAnjirMambulauVillageRegardingtheUseofAntibiotics.SuryaMedikaJournal.2018;4(1):80
[26] CalhounC,WermuthHR,HallGA.Antibiotics.TreasureIsland(FL):StatPearlsPublishing;2022.
[27] WatiAM.RostikarinaNA.TheRelationshipbetweenCommunityEducationLeveland Knowledge Level of OralAntibioticUseinSlorokVillage,MalangRegency[thesis].Malang:IndonesianMen'sAcademy;2019.
[28] LVSeries.IndependentUseofAntibioticsinHealthandNon-HealthStudentsatHasanuddinUniversity[thesis].Makassar:HasanuddinUniversity;2020.
[29] BuiT,PreussCV.Cephalosporins.In:StatPearls.TreasureIsland(FL):StatPearlsPublishing;2022.
[30] LukitoJI.ProphylacticAntibioticsinSurgery.CDKJournal.2019;46(12):777-782
[31] IndonesianObstetricsandGynecologyAssociation.GuidetoProphylacticAntibioticsinObstetric-GynecologicalSurgery.Jakarta:IndonesianDoctorsAssociation;2013.P.1-9

[32] RepublicofIndonesia.RegulationoftheMinisterofHealthoftheRepublicofIndonesiaNumber2406/MENKES/PER/XII/2011 concerningGeneralGuidelinesfortheUseofAntibiotics.Jakarta.2011
[33] CommitteeonPracticeBulletins-Obstetrics.“ACOGPracticeBulletinNo.199:UseofProphylacticAntibioticsinLaborandDelivery.”Obstetricsandgynecology. Vol.132.3(2018):e103-e119.doi:10.1097/AOG.0000000000002833
[34] WorldHealthOrganization.WHORecommendationsForPreventionAndTreatmentOfMaternalPerpartumInfection.Geneva;2015.P.36-41
[35] Republic of Indonesia. Minister of Health Regulation Number 8 concerning Community Empowerment in the HealthSector.Jakarta.2019
[36] LubaS.DescriptionoftheCharacteristicsof Mothers Giving Birth by Cesarean Section at RSIA Siti FatimahMakassarin2018.SandiKarsaPharmacyJournal.2018;4;(7):94-98.
[37] MaelaningsihFS,FahriatiAR,WijanarkoDA,SupiyatiE.EvaluationoftheUse of Prophylactic Antibiotics inCaesareanSectionPatientsattheSouthTangerangPrivateHospital.In:ProceedingsofSenantias:NationalSeminaronResearchResultsandCommunityService;2020;SouthTangerang:PamulangUniversity;2020;p.373-382. Available from :http://openjournal.unpam.ac.id/index.php/Senan/article/view/8254
[38] SukmaDR,SariRDP.TheInfluenceofPregnantWomen'sAgeFactorsontheTypeofChildbirthatDr.H.AbdulMoeloekLampungProvince.MajorityJournal.2020;9(2):16-20
[39] RahmawatiRI,SupanjiRaharjaSO.TheRelationshipbetweenEducationalLevelandHistoryofAntenatalCare(ANC)withSectioCaesarea[thesis].Surakarta;2018.
[40] Hijriani,RahimI,HengkyHK.CharacteristicsofMothersGivingBirthwithSectioCaesareaatAndiMakkasauParepareRegionalGeneralHospital.HumanandHealthScientificJournal.2020;3(2):257-264
[41] KomariahS,NugrohoH.TheRelationshipbetweenKnowledge,AgeandParitywiththeIncidenceofPregnancyComplicationsinPregnantWomenintheThirdTrimesterattheAisyiyahMotherandChildHospitalinSamarinda. JournalofPublicHealth.2020;5(2):83
[42] SulastriAM,Ni'mahMufidahEN.ContributionofNumberofPregnancies(Gravida)toComplicationsDuringPregnancyandChildbirth.JournalofMaternityNursingScience.2019;2(1):9-16
[43] Tampa'iR,NgalaN,WuaD.EvaluationoftheUseofProphylacticAntibioticsinCesareanSectionPatientsintheCentralSurgery InstallationatXYManadoHospital.FarmasindoJournal.2020;4(1):8-11
[44] SubektiSW.IndicationsforCesareanSectionDelivery.JournalofBiometricsandPopulation.2018;7(1):11-19
[45] AyuningtyasD,OktarinaR.MisnaniartiNNDS.HealthEthicsinChildbirthviaSectioCaesareaWithoutIndication. MKMIJournal.2018;14(1):9-16
[46] WardhaniYM.EvaluationoftheUseofProphylacticAntibioticsinCesareanSectionPatientsatSiloamHospital, Palembang.InitialSaelmakersHealthJournal.2021;4(1):132-141
[47] ArumughamVB,GujarathiR,CascellaM.ThirdGenerationCephalosporins.In:Statpearls.TreasureIsland(Fl):StatpearlsPublishing;2022.
[48] SerioAW,MagalhãesML,BlanchardJS,ConnollyLE.Aminoglycosides:MechanismsofActionandResistance.In:AntimicrobialDrugResistance;2017.
[49] ChavesBJ,TadiP.Gentamicin.In:Statpearls.TreasureIsland(Fl):StatpearlsPublishing;2022.
[50] EkaR.EvaluationoftheUseofAntibioticsinCaesareanSectionsattheGeneralHospitalofWestNusaTenggaraProvinceinJune[thesis].Mataram:MuhammadiyahUniversityofMataram;2019.
[51] WorldHealthOrganization.WHORecommendationsonProphylacticAntibioticsforWomenUndergoingCaesareanSection. Geneva;2021.P.12