TheEvaluationofObstetricOutcomeofPostdatedPregnancy

Abstract:

Background: Postdated pregnancy is one of the commonest obstetric conditions. Pregnancy is called term when it lies between 37 weeks to 40 weeks from the last menstrual period. If the pregnancy exceeds 40 weeks it is called as postdated pregnancy.

Methods:FromJanuarytoJune2022,researchersfromtheResearch institute Dhaka Medical College and Hospital,carriedoutthisprospectiveobservationalstudy.Wesurveyed100participantsforthisresearch.Aftercarefullyevaluatingthewomanandthefetus,inductionoflaborwasconductedafterthedue datehadpassed.Intactmembrane,cephalicpresentation,singletonpregnancies,andalowBishopscoreinpost-datedpregnancieswerealsorequirementsforparticipation.Womenwithabsolutecontraindications toinductionoflabor,suchasacontractedpelvis,placentaprevia,unexplainedvaginalhemorrhage,breechpresentation,orahistoryofcaesareansection,werenotincludedintheanalysis.

Results: DuringthestudySixtypercentofthepopulationiscomprisedofyoungadultsages21to30.Therewere42%intheoxytocingroup,38%intheARM+oxytocingroup,and14%inthemisoprostolgroup.Therewere30%unsuccessfuldelivieswithoxytocindrip,25%withARM+Oxytocindrip,and14%withmisoprostol.Thevastmajorityofbirthsoccurrednaturallyviathecervix,whereasaround33%requiredacaesareansectionand10%requiredtheuseofforceps.Thefetaldistressratewas13%,whilethecervixconditionswerepoorin5%.75%ofthenewbornswereveryfine.

Conclusion: Timelylaboriscloselyconnectedwithpositivebirthoutcomes.Itiscriticaltomakeacorrectdiagnosisofpostdatism.Withtherightadviceandconstantmonitoringfrommedicalprofessionals,postpartumdepressioninmothersmaybealleviated.Manyhospitalsaroundthecountryresorttocaesareansectionstoendpost-datedpregnanciesbecauseoftechnologicallimitationsinfoetalmonitoringandoxytocintitration.Inducinglaborseemstobesafeforbothmotherandchildwhenafull-termcervixandfavorablefetalpresentationarepresent.

Keywords:medicalinduction,labour,postdatedpregnancy

Introduction

Theevolutionofobstetricoutcomesinpostdatedpregnancieshasbeenasubjectofextensiveresearch andclinicalinterest.Postdated pregnancy is a prevalent obstetric condition frequently encountered in clinical practice. Term pregnancy is defined as occurring between 37 and 40 weeks from the last menstrual period. When a pregnancy surpasses the 40-week mark, it is referred to as a postdated pregnancy. The incidence of post term pregnancy accounts for approximately 7% of all pregnancies. Understandingthechangesinobstetricoutcomesassociatedwithpostdatedpregnanciesisessentialf oreffectivemanagementanddecision-makinginmaternalcare.[1-3]

Historically,postdatedpregnancieshavebeenlinkedtoanincreasedriskofadversematernalandfetal outcomes.Complicationssuchasfetalmacrosomia,meconiumaspirationsyndrome,fetaldistress,o perativevaginalorcesareandeliveries,andstillbirthhavebeenreportedathigherratesinpostdatedpre gnanciescomparedtotermpregnancies.Theriskofplacentalinsufficiency,umbilicalcordaccidents, andintrauterinegrowthrestrictionalsoappearstoincreasewithprolongedgestation.[4-6]

However,withadvancesinobstetriccareandimprovementsinmonitoringtechniques,theunderstan dingandmanagementofpostdatedpregnancieshaveevolved.Contemporaryresearchsuggeststhatt heriskofadverseoutcomesinpostdatedpregnanciesmaynotbeassignificantaspreviouslybelieved, andtheassociationbetweenprolongedgestationandadverseoutcomesmaybemorecomplex.[5-7]

Recentstudieshavehighlightedtheimportanceofaccurategestationalageassessment,asmiscalcula tionoftheduedatecanresultinunnecessaryinterventionsorundueconcerns.Additionally,closermo nitoringoffetalwell-beingthroughmethodssuchasfetalmovementcounting,non-stresstests,andultrasoundevaluationshashelpedidentifyhigh-riskcasesandfacilitatetimelyinterventionwhenneeded.[8]

Advancementsininductiontechniquesandimprovementsinthemanagementofpostdatedpregnanc ieshavealsocontributedtobetterobstetricoutcomes.Inductionoflaboriscommonlyrecommendedi npostdatedpregnanciestomitigatetherisksassociatedwithprolongedgestation.However,theoptim altimingandmethodsofinductionremainsubjectsofongoingresearchandclinicaldebate.[9-10]

Thisarticleaimstoexploretheevolutionofobstetricoutcomesinpostdatedpregnancies,considering bothhistoricalperspectivesandrecentadvancements.Byreviewingcurrentevidenceandtrends,wea

imtoprovideinsightsintothechanginglandscapeofmanagingpostdatedpregnanciesanditsimpacton maternalandfetaloutcomes.Understandingtheevolvingunderstandingandmanagementstrategiesinpostdatedpregnanciescanassisthealthcareprovidersinmakinginformeddecisionsandoptimizingcareforwomenwithprolongedgestation.

Objective

Toassessobstetricoutcomeofpostdatedpregnancy

Method

ThisprospectiveobservationalstudywasconductedbyresearchersattheResearch institute DhakaMedical College and Hospital,betweenJanuary2022andJanuary2023.Onehundredpatientswereincludedinthestudy.Doctorsdecidedtoinducelaborafterthedueдatehadpassedfollowingathoroughexaminationofthepregnantmotherandherunbornchild.SingletonpregnancieswithalowBishopscoreandanintactmembranewereprioritizedforadmissionafterduedateshadpassed.Womenwhohadabsolutecontraindicationstoinductionoflaborwereexcludedfromthestudy.Theseincludedwomenwhohadacontracted pelvis,placentaprevia,atypicalvaginalbleeding,anon-head-downfetalposition,orapreviouscaesareansection.Thecervixwasofficiallygradedusing Bishop'sgradingmethodinlatepregnancies.Inthefirstgroup,patientsweretreatedonlywiththeoxytocindripmethod.Dosingmustbeindividualized.Theamountofoxytocinadministeredtoeachpatientisdetermined bytheresultsofabiologictestdesignedtostimulatelabor.Theuseofthismethodrequiresclosesupervisionbyknowledgeablepersonnelatalltimes.

For women receiving misoprostol, 25 µg were administered in the posterior fornix of the vagina. The dose was repeated every 4 hours, until a pattern of at least 3 contractions every 10 minutes was obtained. The maximum dose was 200 µg. If this contraction pattern had not been reached by four hours after the administration of the eighth dose, induction was considered to have failed. After the ideal pattern of contractions was reached, misoprostol was no longer administered.

For the women in the oxytocin group, an intravenous infusion of 2 mU/min was used, which was doubled at 30-minute intervals until the appropriate contraction pattern was obtained. The infusion dose was increased to a maximum of 20 mU/min, at which point it was then

maintained constant. If the contraction pattern had not been induced by the time that 15 IU of oxytocin had been infused, the induction was also considered to have failed. Even after the ideal pattern was reached, oxytocin flow was continued. In the case of women receiving dinoprostone, the prescribed regimen involved the administration of dinoprostone gel vaginally at a dosage of 1 mg. This dosage was repeated every 6 hours, up to a maximum of four doses.

Peoplewithahistoryofasthma,glaucoma,cardiacinfarction,chorio-amnionitis,orrupturedmembranesshouldnotundergoinductionwithprostaglandins.Tocheckforoverstimulation,weregularlymonitoredthefetus'sheartrate.Thecervicalscorewasrecalculatedafterafurther4-hourdelay.Duringthelaststagesoflabor,thedosewasstopped.Ifthecervixhadnotmaturedafter6hours,thedosewasadministeredagain.Thepartographwasutilizedevenwhenthepatientwasinactivelabor.Statisticalsignificanceiscalculatedwiththeuseofthechi-squaretestandtheassociatedprobabilityvalue.

Results

Intable-1showsagedistributionofthepatientswheremostofthepatientsbelongto21-30yearsagegroup,60%.Thefollowingtableisgivenbelowindetail:

Table-1:Agedistributionofthepatients

Agegroup	Percentage(%)
21-30years	**60%**
31-40years	**40%**

Intable-2showsdemographicstatusofthepatientswhere42%justcompletedtheirsecondarylevelofeducationfollowedby43%patients’husbandwerefarmer,80%patientsmarriedin13-17yearsage. Thefollowingtableisgivenbelowindetail:

Table-2:Demographicstatusofthepatients

Educationalstatus	Percentage(%)

Illiterate	9%
Primary	11%
Secondary	42%
SSC	25%
HSC	13%
Husbandoccupation	
Businessman	35%
Farmer	43%
Rickshawpuller	16.7%
Trackdriver	6.3%
Income	
10000-15000tkmonthly	45.8%
>150000monthly	54.2%
Ageofmarriage	
13-17years	80%
18-25years	20%

Figure-1showsgravidastatusofthepatientswhere78%wereprimigravida.

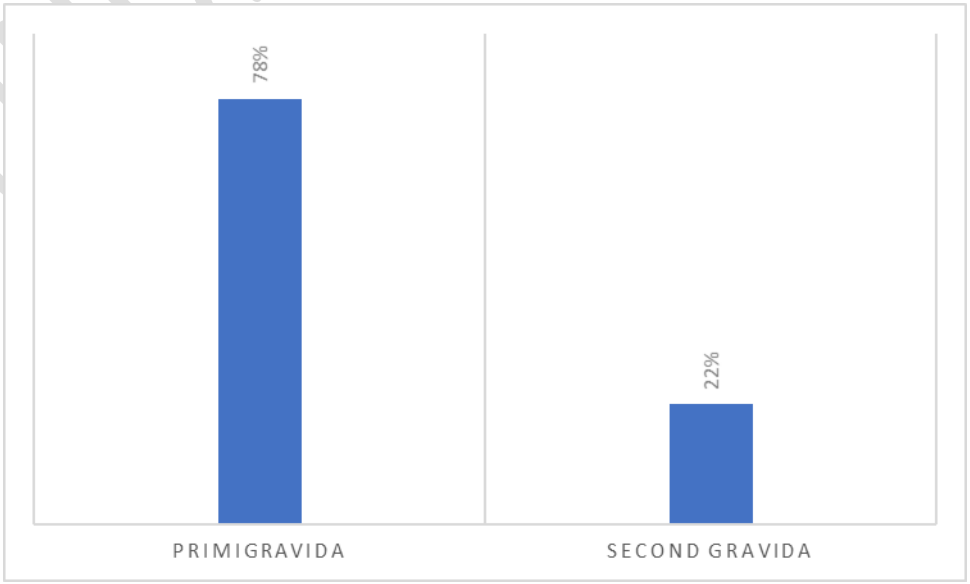

Figure-1:Gravidastatusofthepatients

Table-3showsMethodsappliedforinductioninthepost-datedpregnancywhere42%wereinoxytocindripfollowedby38%wereinARM+Oxytocindrip,14%wereinmisoprostol.

Table-3:Methodsappliedforinductioninthepost-datedpregnancy

Methodsappliedforinductioninthepost-datedpregnancy	Percentage(%)
Oxytocindrip	**42%**
ARM+Oxytocindrip	**38%**
Misoprostol	**14%**
Dinoprostone	**8%**

Table-4showsTotalnumberofcasesfailedafterinductioninthepost-datedpregnancyinoxytocindrip30%werefailedcasesfollowedbyinARM+Oxytocindripitwas25%,inmisoprostolitwas14%.

Table-4:Totalnumberofcasesfailedafterinductioninthepost-datedpregnancy

Methods	Percentage(%)
Oxytocindrip	**30%**
ARM+Oxytocindrip	**25%**
Misoprostol	**14%**
Dinoprostone	**0%**

Table-5showsModeofdeliveryafterinductioninpost-datedpregnancywheremajorityhadSpontaneousvaginaldeliveryfollowedby33%hadDeliverybyCaesareansectionand10%hadDeliverywiththeaidofForceps.

Table-5:Modeofdeliveryafterinductioninpost-datedpregnancy

Modeofdelivery	Percentage(%)
Spontaneousvaginaldelivery	**47%**
DeliverywiththeaidofForceps	**10%**

DeliverywiththeaidofVentouse	**10%**
DeliverybyCaesareansection	**33%**

Figure-2showsIndicationsofdeliverybyCaesareansectionwhere13%hadfoetaldistressand5%hadunfavorablecervix.

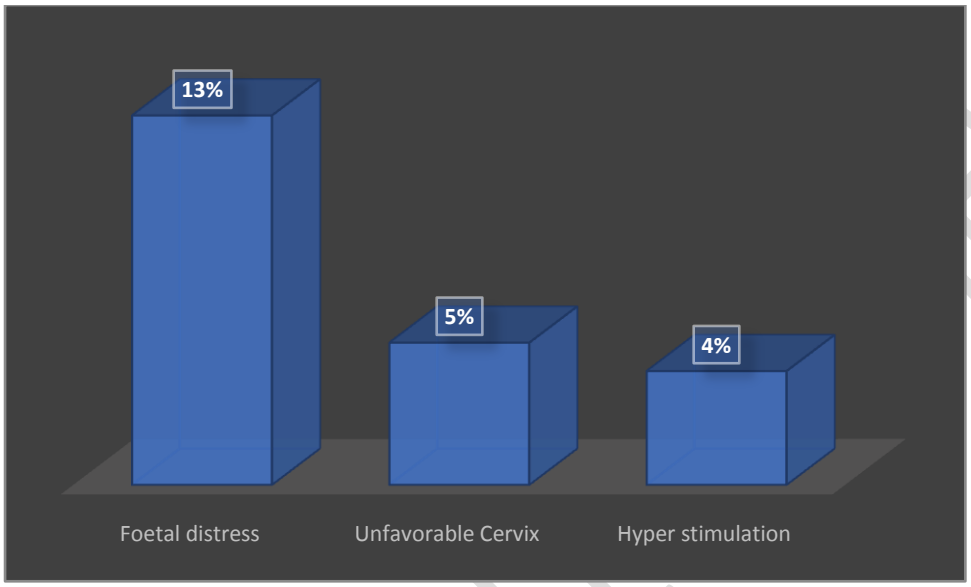

Figure-2:IndicationsofdeliverybyCaesareansection

Table-6showsFoetaloutcomeinthepost-datedpregnancyafterinductionwhere75%werehealthybabyand20%weredistressbaby.

Table-6:Foetaloutcomeinthepost-datedpregnancyafterinduction

Foetaloutcomeinthepost-datedpregnancyafterinduction	Percentage(%)
Healthybaby	**75%**
Distressbaby	**20%**
Stillbirth(IUD)	**5%**

Table 7 shows Maternal complications, where 4% had postpartum haemorrhage. Followed by 3% had perineal tear and 1% had cervical tear.

Table 7: Maternal complications.

Maternal complication	Percentage (%)
Postpartum haemorrhage	4
Perineal tear	3
Cervical tear	1
Shoulder dystocia	1

Table-8 shows Fetal complications. Where 5% had Meconium aspiration syndrome. Followed by 4% had Respiratory distress syndrome and 3% had Macrosomia.

Table-8: Fetal complications.

Fetal complication	Percentage (%)
Meconium aspiration syndrome	5
Respiratory distress syndrome	4
Macrosomia	3
Hyperbilirubinemia	1
Neonatal death	2

Discussion

Theobstetricoutcomesofpostdatedpregnancieshavebeenasubjectofextensiveresearchanddiscussioninthefieldofmaternal-fetalmedicine.Whilehistoricallytherewereconcernsaboutincreasedrisksandadverseoutcomesassociatedwithprolongedgestation,recentstudieshaveshednewlightonthetopic,presentingamorenuancedunderstandingofobstetricoutcomesinpostdatedpregnancies.

Oneoftheprimaryconcernsinpostdatedpregnanciesistheincreasedriskoffetalmacrosomia,whichrferstoalarger-than-averagebirthweight.However,recentevidencesuggeststhattheassociationbetweenpostdatedpregnanciesandfetalmacrosomiamaynotbeasstrongaspreviouslythought.Studieshaveshownthataccurategestationalageassessmentplaysacrucialroleindifferentiatingbetweentruemacrosomiaandbabieswhoarelargeforgestationalageduetoprolongedgestation.Withappropriatemonitoringandtimelyintervention,theriskofcomplicationsassociatedwithmacrosomiacanbeminimized.[11]

Theriskoffetaldistressandmeconiumaspirationsyndrome(MAS)isalsooftenassociatedwithpostdatedpregnancies.However,advancementsinfetalmonitoringtechniqueshaveimprovedthedetectionandmanagementofthesecomplications.Continuouselectronicfetalmonitoringduringlabor,alongwithothermethodssuchasfetalscalppHsamplingandultrasoundevaluationofamnioticfluidvolume,helpidentifysignsoffetaldistressandguidetimelyinterventionssuchascesareandeliveryorinstrumentaldelivery.[12]

Anotherimportantaspectoftheobstetricoutcomeinpostdatedpregnanciesistheriskofstillbirth.Historically,postdatedpregnancieswerethoughttocarryanincreasedriskofstillbirth.However,recentpopulation-basedstudieshavesuggestedthattheoverallriskofstillbirthinpostdatedpregnanciesisrelativelylowandthatcarefulmonitoringandtimelyinterventioncanfurtherreducethisrisk.Closesurveillance,including fetal movement counting and non-stress tests, can help identify signs of fetal compromise and prompt appropriate action.

Itisworthnotingthatwhileadvancesinobstetriccarehavecontributedtoimprovedoutcomesinpostdatedpregnancies,thereisstillaneedforfurtherresearchtobetterunderstandthelong-termoutcomesandpotentialrisksassociatedwithprolongedgestation.

Theunderstandingofobstetricoutcomesinpostdatedpregnancieshasevolvedovertime.Althoughthereare still concerns and increased risks associated with prolonged gestation, advancements in prenatal monitoring, accurate gestational age assessment, and timely interventions have helped mitigate some of these risks. Close surveillance, appropriate timing of induction, and individualized care remain essential in optimizing obstetric outcomes in postdated pregnancies. Continued research in this field will further enhance our understanding and management strategies, ultimately improving outcomes for both mothers and babies.

One randomized controlled trial compared expectant management versus induction of labor in post-term nulliparous women. In our study, 4% had postpartum haemorrhage. Followed by 3% had

perineal tear and 1% had cervical tear. The study found no significant difference in adverse perinatal outcomes between the two groups, suggesting that expectant management may be a safe option in selected cases.[12]

Whereasotherpopulation-basedstudyanalyzedalargecohortofpost-termpregnanciesandfoundthattheriskofadverseoutcomes,includingstillbirthandneonatalmorbidity,increasedafter42weeksofgestation.Thefindingsemphasizedtheimportanceofcarefulmonitoringandtimelyinterventioninpost-termpregnancies.[13]

Thispopulation-basedstudycomparedinducedlaborwithexpectantmanagementintermpregnancies,includingpost-termpregnancies.Theresultsdemonstratedthatinductionoflaborwasassociatedwithalowerriskofperinatalmortalityandlowerratesofneonatalcomplications,supportingthepotentialbenefitsofinductioninpost-termpregnancies.

Anotherprospectivecohortstudyaimedtodevelopastillbirthriskpredictionmodelforpost-termpregnancies.Thefindingsidentifiedseveralriskfactors,suchasmaternalage,bodymassindex,andfetalgrowthrestriction,thatcouldaidinidentifyinghigh-riskcasesandinformingclinicaldecision-making.[14]

Conclusion

Earlylaboronsetisapredictorofpositiveperinataloutcomes.Itiscrucialtoconfirmapostdativediagnosis.Maternalanxietyandsideeffectsfrompostdatismtherapymaybelessenedwithpropersupervisionandconsistentmonitoring.Duetothelimitationsofthefoetalmonitoringsystemandoxytocintitration,caesareansectionisroutinelyusedtoterminatethemajorityofpost-datedpregnanciesatnumerousfacilitiesthroughoutthecountry.Therateofcesareansectionsmightb

ereducedwiththeintroductionofstate-of-the-artinfusionandfoetalmonitoringsystems,suchastheautomatedinfusionpump,cardiotocography,foetalscalpbloodpHstudy,etc.Ifthewoman'scervixhasdevelopedandthebabyisproperlypositionedinthebirthcanal,inducinglaborposeslittlerisktoeitherthemotherorthebaby.Inductionoflaborisrecommendedforwomenwithuncomplicatedpregnancies,whereasconsiderationofLSCSiswarrantedforthosewithcomplications.Correctevaluationofriskfactorsandidentificationofafull-termpregnancymayhelpreducethelikelihoodofanegativeoutcome.

Ethical Approval:

As per international standard or university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

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