Amniyon Sıvısı Patolojilerine Yaklaşım

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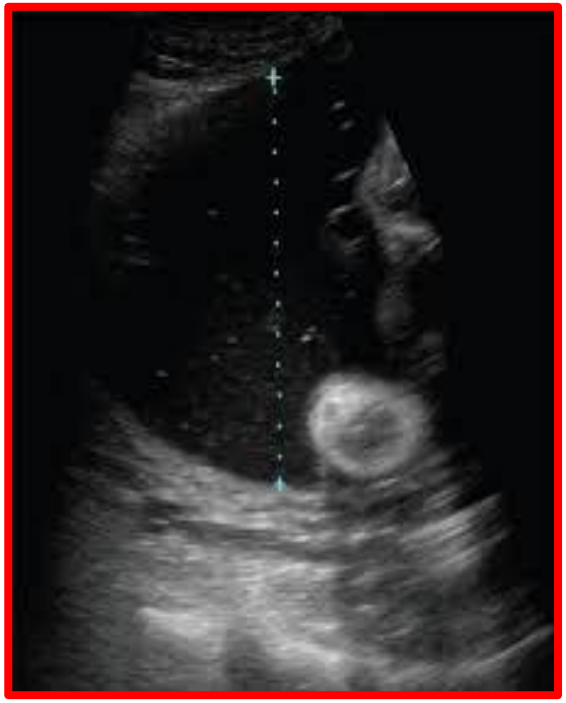
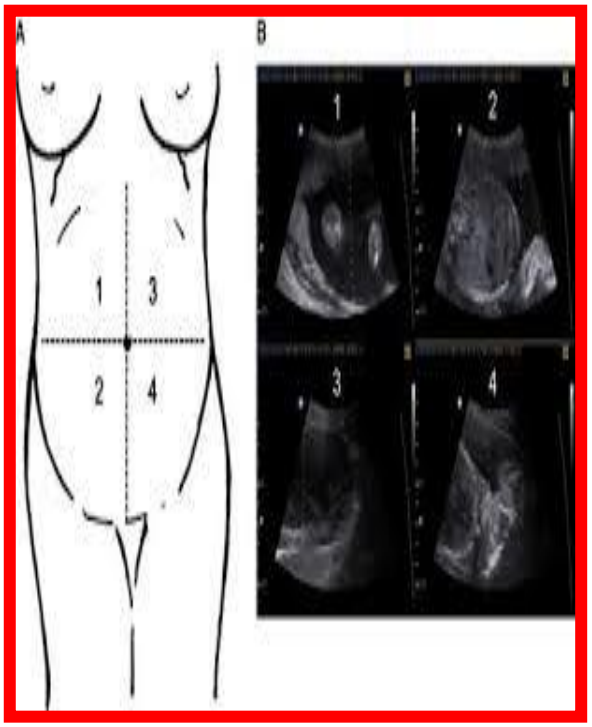
Giriş

- ❖ Amniyon sıvısı (AS) değerlendirmesi antenatal fetal değerlendirmenin bir parçasıdır.
- ❖ AS patolojileri ile kötü perinatal sonuç (IUGR, makrozomi, perinatal mortalite) ilişkisi vardır.
- ❖ Subjektif değerlendirmeden çok objektif değerlendirme önemlidir
- ✓ Tek vertikal cep vs Amniyotik sıvı endeksi (AFI)

Tek vertikal cep



Amniyotik sıvı endeksi



✓ **Polihidramniyos**	>8 cm	> 25 cm
✓ **Oligohidramniyos**	< 2cm	< 5cm

AFI: Oligohidramniyos tanısında yüksek yanlış pozitiflik hızı ve gereksiz doğum indüksiyonu kararı..

Tek vertikal cep ölçümü fetal takipte daha güvenli…

Oligohidramniyos

- **Fetal nedenli**
  - ✓ Renal agenez
  - ✓ Obstrüktif üropati
  - ✓ EMR
  - ✓ IUGR
  - ✓ Post term gebelik
- **Maternal nedenli**
  - ✓ Dehidratasyon, hipovolemi
  - ✓ Hipertansif hastalıklar
  - ✓ Uteroplasental yetmezlik
  - ✓ Antifosfolipid sendrom
  - ✓ İdiopatik

Altta yatan neden: sıvı azlığı derecesi ve saptandığı gebelik haftasına göre değişmektedir.

İlk Trimester Oligohidramniyos

- Nadir görülür. Çoğunlukla kötü prognozludur.
- **Nedenleri:** konjenital kalp anomalileri, kromozomal aneuploidiler, fetal ölüm ve erken membran rüptürüdür. CVS sonucu iatrojenik de olabilir. Nedeni belli olmayabilir.

İkinci Trimester Oligohidramniyos

- Nadir görülür.
- **Nedenleri:** konjenital üriner sistem anomalileri, preterm EMR, plasental nedenler, amniyokoryonik separasyon, erken ve şiddetli IUGR, nedenli belirsiz grup (%3)

Üçüncü Trimester Oligohidramniyos

- İnsidans %3-5 (geç preterm grup) ; 40-42 hafta arası (%5-11)
- Nedenleri: preterm EMR, IUGR, ablasyo plasenta, fetal anomaliler, iyatrojenik (ACE inhibitörleri veya PG sentez inhibitörleri) nedenlere bağlı olabilir.
- Nedeni belli olmayabilir.
- Perinatal mortalite riski

- İkinci trimesterde uzun süreli oligohidramnios, pulmoner hipoplazi ve kontraktür anomalileri ile ilişkili
- Termde oligohydramnios, doğum indüksiyon sıklığında artış, intrapartum fetal distres oranlarında artış ve sezaryen doğum sıklığında artış ile ilişkilidir

Klinik Yaklaşım

- Etiyolojiye göre yaklaşım
- Saptandığı gebelik haftası önemli
- Fetal anatomik değerlendirme
- Fetal biyometre
- EMR tanısı için servikovajinal sıvının incelenmesi
- Maternal hidrasyon
- Amniyoinfüzyon (aydınlatılmış onam alınarak)

- İzole ve persistant oligohidramniyos'ta, maternal ve fetal durum stabilse, 36-37 gebelik haftasında doğum kararı. Preterm olgularda ise yakın fetal izlem (ACOG Practical Bulletin 2014)

Nedene Yönelik Klinik Yaklaşım

- Bilateral renal agenez varlığı, ilk trimester veya 22. hafta altı olgularda gebelik terminasyonu seçeneği

- Preterm ve term EMR'de gebelik haftasına göre yönetim

- Erken veya geç başlangıçlı IUGR var ise umbilikal arter, CPR, duktus venosus ve fetal iyilik hali testlerine göre yaklaşım 34-37 gebelik haftası doğum kararı alınması (ACOG Practical Bulletin Obstet Gynecol 2013)

Amniyoinfüzyon Endikasyonları

❖ **Tanısal**

✓ Anhidramniyos durumunda fetal anatomik inceleme imkanı sağlama,

✓ Erken membran rüptürü kesin tanısı

❖ **Terapötik**

✓ İntrapartum tekrarlayan değişken deselerasyonlar durumunda sezaryen hızının azaltılması

❖ **Profilaktik**

✓ Membran rüptüründe seri uygulama ile neonatal kötü sonucu azaltma

✓ Kalın mekonyumu olan olgularda MAS önlemi

Gramellini et al. Antepartum amnioinfusion: a review. J Matern Fetal Neonatal Med 2003;14(5):291-96.

Amniyoinfüzyon

- 1957 Carey tarafından klinik pratikte kullanımı
- Teknik
  - ✓ Ultrason eşliğinde ılık normal saline veya Ringer Laktat solusyonu
- **Transabdominal infüzyon**
  - Steril iğne ile amniyosentez gibi kaviteye giriş
  - 250-500 cc veya gebelik başına 10 ml kontrollü sıvı verilmesi (≤50ml/dk)
- **Trans-servikal infüzyon** (doğumda memban rüptürü sonrası)
  - Tek veya çift lümenli kateter ile servikse kateter u
  - 250-500 ml bolus
  - Sonra 180 cc/saat hız ile

OBSTETRICS WORLD PREMATURITY DAY

Transabdominal amnioinfusion for preterm premature rupture of membranes: a systematic review and metaanalysis of randomized and observational studies

Shay Porat, MD; Hagai Amsalem, MD, MSc; Prakesh S. Shah, MD, MSc; Kellie E. Murphy, MD, MSc

OBJECTIVE: The purpose of this study was to review systematically the efficacy of transabdominal amnioinfusion (TA) in early preterm premature rupture of membranes (PPROM).

STUDY DESIGN: We conducted a literature search of EMBASE, MEDLINE, and ClinicalTrials.gov databases and identified studies in which TA was used in cases of proven PPROM and oligohydramnios. Risk of bias was assessed for observational studies and randomized controlled trials. Primary outcomes were latency period and perinatal mortality rates.

RESULTS: Four observational studies (n = 147) and 3 randomized controlled trials (n = 165) were eligible. Pooled latency period was 14.4 (range, 8.2–20.6) and 11.41 (range −3.4 to 26.2) days longer in the TA group in the observational and the randomized controlled trials, respectively. Perinatal mortality rates were reduced among the treatment groups in both the observational studies (odds ratio, 0.12; 95% confidence interval, 0.02–0.61) and the randomized controlled trials (odds ratio, 0.33; 95% confidence interval, 0.10–1.12).

CONCLUSION: Serial TA for early PPROM may improve early PPROM-associated morbidity and mortality rates. Additional adequately powered randomized control trials are needed.

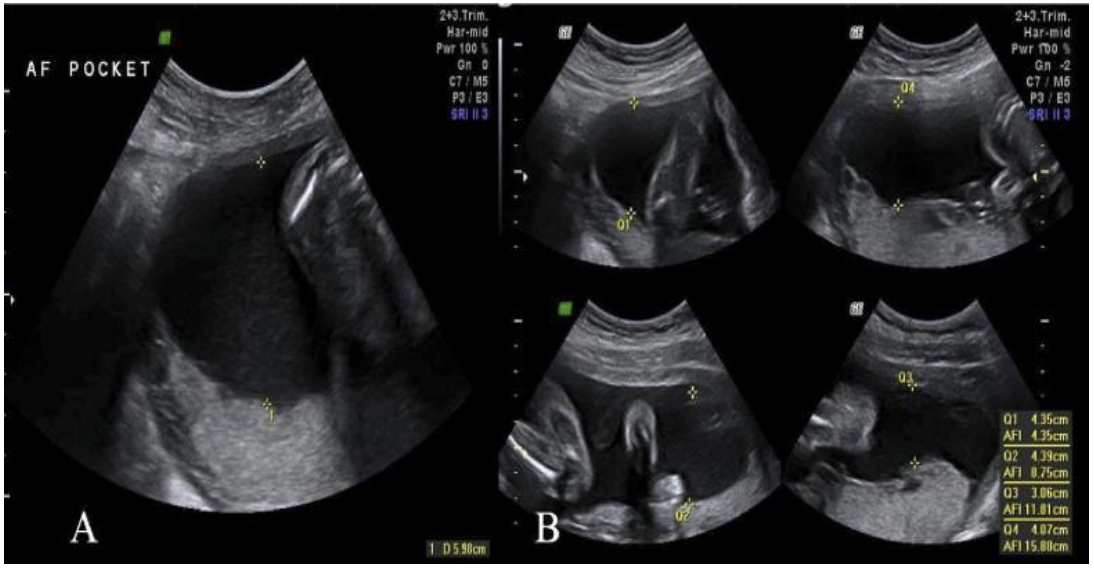
Key words: amnioinfusion, latency period, oligohydramnios, PPROM, pulmonary hypoplasia

Cite this article as: Porat S, Amsalem H, Shah PS, et al. Transabdominal amnioinfusion for premature preterm rupture of membranes: a systematic review and metaanalysis of randomized and observational studies. Am J Obstet Gynecol 2012;207:393.e1-11.

TRANSABDOMİNAL AMNİYOİNFÜZYON

24 hafta üstü; 26-34 hafta arası veya < 26 haftalık preterm EMR olguları

AFI< 5 cm olgulara 150-300 cc veya gebelik haftasına başına 10 cc ılık Ringer Laktat veya %0.9 saline infüzyonu



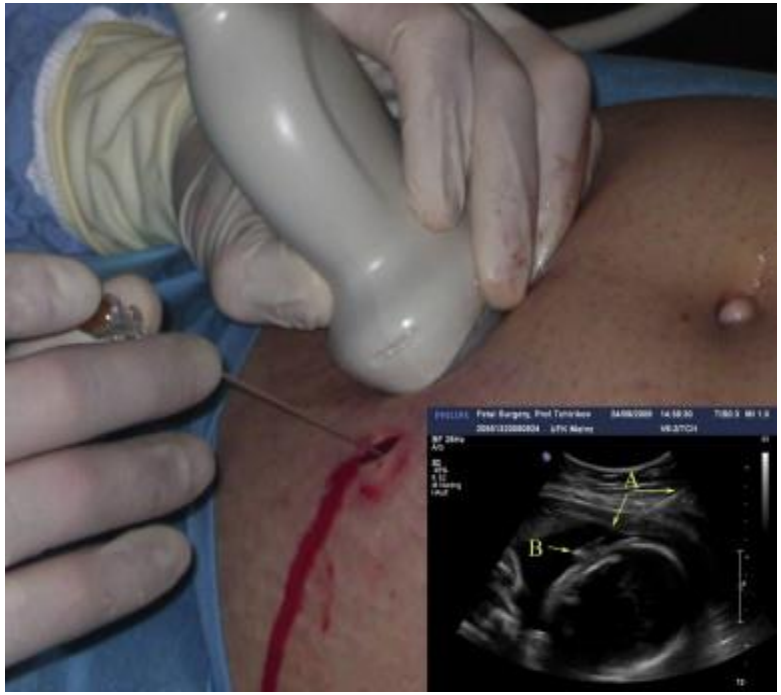


FIGURE 2

Effect of serial TA on neonatal outcomes

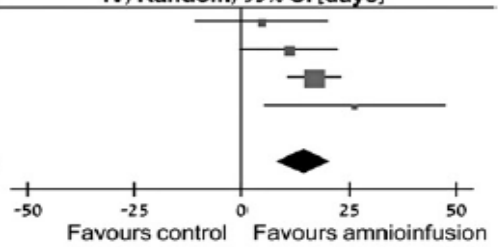
A

Latency period

Study or Subgroup	Experimental Mean [days]	Experimental SD [days]	Experimental Total	Control Mean [days]	Control SD [days]	Control Total	Weight	Mean Difference IV, Random, 95% CI [days]
Vergany et al, 1997	38	22.75	18	33.5	23	16	14.2%	4.50 [-10.91, 19.91]
Gramellini et al, 2003	34.75	23.25	24	23.75	17.75	29	24.0%	11.00 [-0.33, 22.33]
Garzetti et al, 1997	28.7	11.9	18	11.9	7	18	53.9%	16.80 [10.42, 23.18]
Ogunyemi , 2002 (1)	42.4	33.6	12	16.2	16.97	12	7.9%	26.20 [4.90, 47.50]
Total (95% CI)			**72**			**75**	**100.0%**	**14.40 [8.24, 20.56]**

Heterogeneity: Tau² = 7.75; Chi² = 3.63, df = 3 (P = 0.30); I² = 17%
Test for overall effect: Z = 4.58 (P < 0.00001)

(1) SD was derived from published SE and n

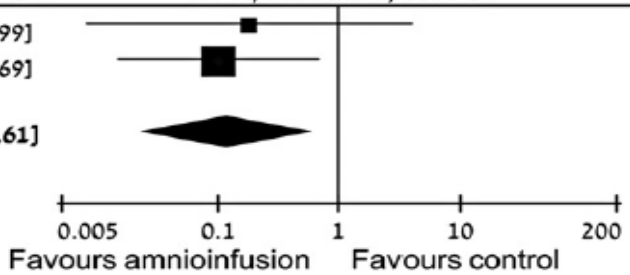


B

Perinatal mortality

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Random, 95% CI
Garzetti et al, 1997	0	18	2	18	27.9%	0.18 [0.01, 3.99]
Ogunyemi , 2002	4	12	10	12	72.1%	0.10 [0.01, 0.69]
Total (95% CI)		**30**		**30**	**100.0%**	**0.12 [0.02, 0.61]**
Total events	4		12			

Heterogeneity: Tau² = 0.00; Chi² = 0.10, df = 1 (P = 0.76); I² = 0%
Test for overall effect: Z = 2.55 (P = 0.01)



C

Pulmonary hypoplasia

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Random, 95% CI
Ogunyemi , 2002	1	11	2	7	33.2%	0.25 [0.02, 3.47]
Vergany et al, 1997	6	13	12	14	66.8%	0.14 [0.02, 0.91]
Total (95% CI)		**24**		**21**	**100.0%**	**0.17 [0.04, 0.78]**
Total events	7		14			

Heterogeneity: Tau² = 0.00; Chi² = 0.12, df = 1 (P = 0.73); I² = 0%
Test for overall effect: Z = 2.28 (P = 0.02)

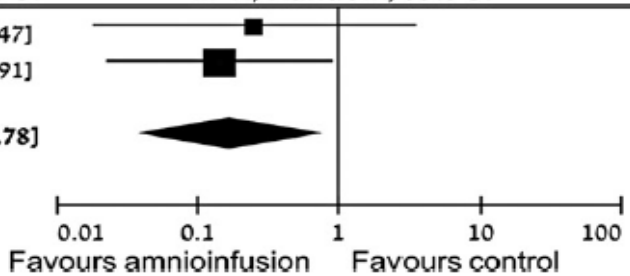


FIGURE 3

Effect of serial TA on neonatal outcomes for randomized controlled trials

A

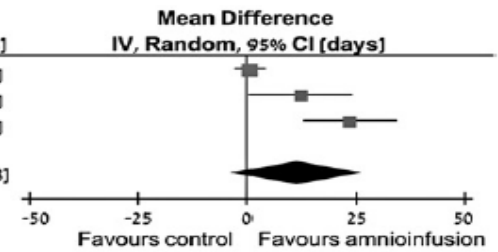
Latency period

Study or Subgroup	Experimental Mean (days)	Experimental SD (days)	Experimental Total	Control Mean (days)	Control SD (days)	Control Total	Weight	Mean Difference IV, Random, 95% CI (days)
Singla et al, 2010	7.27	7.53	30	6.7	5.93	30	37.5%	0.57 [-2.86, 4.00]
Tranquilli et al, 2005 (1)	21	17.45	17	8.76	17.45	17	30.8%	12.24 [0.51, 23.97]
De Santis et al, 2003	41.6	29.7	37	18.2	15.1	34	31.7%	23.40 [12.57, 34.23]
Total (95% CI)			**84**			**81**	**100.0%**	**11.41 [-3.36, 26.18]**

Heterogeneity: Tau² = 148.48; Chi² = 17.89, df = 2 (P = 0.0001); I² = 89%

Test for overall effect: Z = 1.51 (P = 0.13)

(1) Mean and SD are estimates, calculated according to Hozo et al. (38)



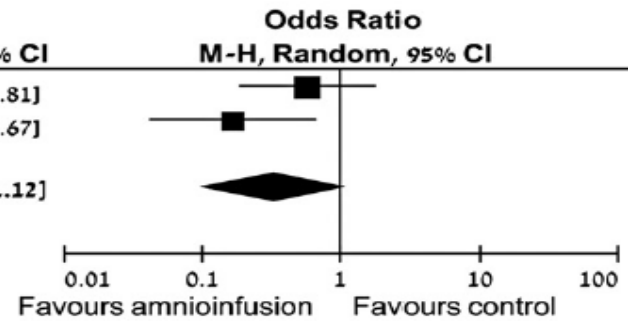
B

Perinatal mortality

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Random, 95% CI
De Santis et al, 2003	27	37	28	34	55.5%	0.58 [0.18, 1.81]
Singla et al, 2010	3	30	12	30	44.5%	0.17 [0.04, 0.67]
Total (95% CI)		**67**		**64**	**100.0%**	**0.33 [0.10, 1.12]**
Total events	30		40			

Heterogeneity: Tau² = 0.35; Chi² = 1.83, df = 1 (P = 0.18); I² = 45%

Test for overall effect: Z = 1.78 (P = 0.08)



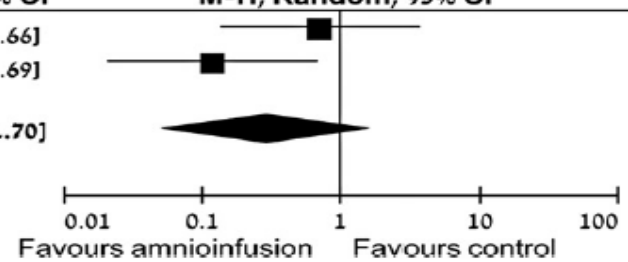
C

Pulmonary hypoplasia

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Odds Ratio M-H, Random, 95% CI
De Santis et al, 2003	5	24	3	11	51.4%	0.70 [0.13, 3.66]
Tranquilli et al, 2005	2	17	9	17	48.6%	0.12 [0.02, 0.69]
Total (95% CI)		**41**		**28**	**100.0%**	**0.30 [0.05, 1.70]**
Total events	7		12			

Heterogeneity: Tau² = 0.83; Chi² = 2.10, df = 1 (P = 0.15); I² = 52%

Test for overall effect: Z = 1.37 (P = 0.17)



Cochrane Database Syst Rev. 2013 Aug 3;8:CD009952. doi: 10.1002/14651858.CD009952.pub2.

Transabdominal amnioinfusion for improving fetal outcomes after oligohydramnios secondary to preterm prelabour rupture of membranes before 26 weeks.

Van Teeffelen S[1], Pajkrt E, Willekes C, Van Kuijk SM, Mol BW.

Author information

Abstract

BACKGROUND: Preterm prelabour rupture of membranes (PPROM) before 26 weeks can delay lung development and can cause pulmonary hypoplasia, as a result of oligohydramnios. Restoring the amniotic fluid volume by transabdominal amnioinfusion might prevent abnormal lung development and might have a protective effect for neurological complications, fetal deformities and neonatal sepsis.

OBJECTIVES: To assess the effectiveness of transabdominal amnioinfusion in improving perinatal outcome in women with oligohydramnios secondary to rupture of fetal membranes before 26 weeks.

SEARCH METHODS: We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (30 April 2013).

SELECTION CRITERIA: All randomised controlled trials comparing transabdominal amnioinfusion with no transabdominal amnioinfusion. Cluster- or quasi-randomised trials were not eligible for inclusion. In cases where only an abstract was available, we attempted to find the full articles.

DATA COLLECTION AND ANALYSIS: Two review authors assessed trials for inclusion. No eligible trials were identified.

MAIN RESULTS: There are no included studies.

AUTHORS' CONCLUSIONS: There is currently no evidence to evaluate the use of transabdominal amnioinfusion in women with oligohydramnios secondary to rupture of fetal membranes before 26 weeks for improving perinatal outcome. Further research examining the effects of this intervention is needed. Two randomised controlled trials are ongoing but final data have not yet been published.

PMID: 23913522 [PubMed - indexed for MEDLINE]

Obstet Gynecol. 2000 Nov;96(5 Pt 2):861-6.

Prophylactic amnioinfusion for intrapartum oligohydramnios: a meta-analysis of randomized controlled trials.

Pitt C[1], Sanchez-Ramos L, Kaunitz AM, Gaudier F.

Author information

Abstract

OBJECTIVE: To evaluate the effectiveness of intrapartum prophylactic amnioinfusion in pregnancies complicated by oligohydramnios.

DATA SOURCES: Randomized controlled trials of prophylactic amnioinfusion in women with oligohydramnios were identified using computerized databases, index reviews, and references cited in original studies and review articles.

METHODS OF STUDY SELECTION: We evaluated, abstracted data from, and analyzed randomized studies of prophylactic intrapartum amnioinfusion in women with oligohydramnios. In every study the group allocation was based exclusively on presence of oligohydramnios. Only published studies with clearly documented outcome data were included. The quality of each trial was evaluated for methodology, inclusion and exclusion criteria, adequacy of randomization, amnioinfusion protocols, definition of outcomes, and statistical analyses. The trials were evaluated concerning cesarean deliveries for fetal heart rate (FHR) abnormalities, overall cesarean rates, acidemia at birth, intrapartum fetal heart rate abnormalities, Apgar scores under 7 at 5 minutes, and postpartum endometritis.

TABULATION, INTEGRATION, AND RESULTS: Thirty-five studies were identified, of which 14 met the inclusion criteria for this systematic review. They included 1533 patients, 793 in the amnioinfusion group, and 740 controls. Odds ratios (OR) with their 95% confidence intervals (CI) for each outcome were calculated. We calculated an estimate of the OR and risk difference for dichotomous outcomes using random and fixed-effects models. A test of homogeneity was done across studies. Women with oligohydramnios who received intrapartum amnioinfusion had lower incidence of cesarean for FHR abnormalities (OR 0.23; 95% CI 0.15, 0.35). Intrapartum amnioinfusion also was associated with lower overall rates of cesarean deliveries (OR 0.52; 95% CI 0.40, 0. 68), acidemia at birth (OR 0.40; 95% CI 0.30, 0.55), FHR abnormalities during labor (OR 0.24; 95% CI 0.17, 0.34), and Apgar scores under 7 at 5 minutes (OR 0.52; 95% CI 0.29, 0.91). Postpartum endometritis rates were similar among the study groups.

CONCLUSION: In the presence of oligohydramnios, prophylactic intrapartum amnioinfusion significantly improves neonatal outcome and lessens the rate of cesarean delivery, without increasing the rate of postpartum endometritis.

Obstet Gynecol. 2000 Jun;95(6 Pt 2):1051-6.

Intrapartum amnioinfusion for meconium-stained fluid: meta-analysis of prospective clinical trials.

Pierce J[1], Gaudier FL, Sanchez-Ramos L.

Author information

Abstract

OBJECTIVE: To evaluate the effectiveness of intrapartum prophylactic amnioinfusion in pregnancies complicated by meconium-stained amniotic fluid.

DATA SOURCES: We identified prospective clinical trials of amnioinfusion in pregnancies complicated by meconium-stained amniotic fluid (AF) published in English by using computerized databases, references in published studies, and index reviews.

METHODS OF STUDY SELECTION: We analyzed prospective studies of intrapartum amnioinfusion for meconium-stained AF. In every case, group allocation was based exclusively on meconium in AF. Only published studies with clearly documented outcome data were included. The trials were evaluated for meconium below the vocal cords, meconium aspiration syndrome, fetal acidemia, cesarean delivery, and postpartum endometritis. Each trial was evaluated for the quality of its methodology, inclusion and exclusion criteria, adequacy of randomization, amnioinfusion protocols, definition of outcomes, and statistical analyses.

TABULATION, INTEGRATION, AND RESULTS: Thirteen studies met inclusion criteria for our systematic review. Odds ratios (ORs) with their 95% confidence intervals (CIs) were calculated for each outcome. Estimates of ORs and risk differences for dichotomous outcomes were calculated using random and fixed-effects models. We tested for homogeneity across the studies. We found that intrapartum amnioinfusion significantly reduced the frequency of meconium aspiration syndrome (OR 0.30; 95% CI 0.19, 0. 46), of meconium below the vocal cords, and neonatal acidemia. Subjects allocated to receive amnioinfusion also had a significantly lower overall cesarean rate (OR 0.74, 95% CI 0.59, 0.93) without increased postpartum endometritis.

CONCLUSION: Amnioinfusion in cases of meconium-stained fluid significantly improves neonatal outcome, lowers the cesarean delivery rate, and does not increase the postpartum endometritis rate.

DOĞUM EYLEMİNDEKİ KOYU MEKONYUMLU HASTALARDAPROFİLAKTİK TRANSABDOMİNAL AMNİYOİNFÜZYON ETKİLİMİDİR?

Prophylactic Transabdominal Amnioinfusion During Labor with Thick Meconium: Does it Work?

Arda LEMBET[x], C. Gürkan ZORLU[x], Berna SEÇKİN[x], Sertaç BATIOĞLU[x]

[x],Zekai Tahir Burak Kadın Hastanesi, ANKARA

Turkiye Klinikleri J Gynecol Obst 2002;12(3):240-3

Makale Dili: TR

ÖZET

Amaç: Bu çalışma Dr.Zekai Tahir Burak Kadın Hastanesinde, Temmuz 1996 ile Mart 1998 tarihleri arasında gerçekleştirilmiştir. Amacımız koyu mekonyumlu hastalarda intrapartum profilaktik transabdominal amniyoinfüzyonun mekonyuma bağlı morbiditeyi azaltmadaki etkinliğini değerlendirmekti.Metod: Doğum eylemindeki koyu mekonyumlu 39 hasta iki gruba randomize edilmiştir. Birinci grup (n=19) transabdominal infüzyon grubunu ve ikinci grup da (n=20) kontrol grubunu oluşturdu. Amniyoinfüzyon için 370 Cye kadar ısıtılan 250-500 ml steril ringer laktat solusyonu dakikada 50 mlyi geçmeyecek şekilde kullanıldı. Transabdominal amniyo-infüzyon direkt ultrasonografi eşliği altında yapıldı. Doğum sırasında devamlı fetal kalp atım monitorizasyonu standart olarak uygulandı.Sonuçlar: Amniyoinfüzyon uygulanan hastalarda, 5. dakika APGAR skoru <7 olması, trakeal mekoyuma rastlanması ve fetal distres nedeniyle yapılan sezaryen sıklığı belirgin olarak azalmıştır.Tartışma: Doğum eylemindeki koyu mekonyumlu hastalarda basit, ucuz ve güvenli bir yöntem olan transabdominal amniyoinfüzyon trakeal mekonyum insidansını azaltarak fetal ve obstetrk sonucu iyileştirmektedir.

ACOG

Committee on Obstetric Practice

Reaffirmed 2014

Committee Opinion

Number 346, October 2006

Amnioinfusion Does Not Prevent Meconium Aspiration Syndrome

ABSTRACT: Amnioinfusion has been advocated as a technique to reduce the incidence of meconium aspiration and to improve neonatal outcome. However, a large proportion of women with meconium-stained amniotic fluid have infants who have taken in meconium within the trachea or bronchioles before meconium passage has been noted and before amnioinfusion can be performed by the obstetrician; meconium passage may predate labor. Based on current literature, routine prophylactic amnioinfusion for the dilution of meconium-stained amniotic fluid is not recommended. Prophylactic use of amnioinfusion for meconium-stained amniotic fluid should be done only in the setting of additional clinical trials. However, amnioinfusion remains a reasonable approach in the treatment of repetitive variable decelerations, regardless of amniotic fluid meconium status.

Amniyoinfüzyon

❖ **Kontrendikasyonları**

- ✓ Koryoamniyonit
- ✓ Ablasyo plasenta
- ✓ Fetal kalp hızı sorunları
- ✓ Çoğul gebelik
- ✓ İmmünosupresyon
- ✓ Vtx dışı prezentasyon
- ✓ Plasenta previa
- ✓ Uterin skar
- ✓ Uterin hipertonus
- ✓ Yaşamla bağdaşmayan fetal anomali

❖ **Komplikasyonları**

- ✓ Uterin hipertonus ve aşırı gerilme
- ✓ Uterin rüptür
- ✓ Ablasyo plasenta
- ✓ Koryoamniyonit
- ✓ Fetal distres
- ✓ Pulmoner emobli
- ✓ Amniyotik sıvı embolisi
- ✓ Kord prolapsusu

En sık görülen yapısal anomaliler

Central nervous system	Neural tube defects (anencephaly, iniencephaly, encephalocele)
Gastrointestinal tract	Esophageal atresia Diaphragmatic hernia Duodenal stenosis (atresia)
Respiratory tract	Cystic adenomatoid malformation of the lung Chylothorax
Cardiovascular system	Ebstein's anomaly, other anomalies with atrioventricular valve regurgitation Arrhythmias (tachycardias, bradycardias) Twin-to-twin transfusion syndrome
Musculoskeletal system	Skeletal dysplasia (eg, thanatophoric dysplasia) Myotonic dystrophy Pena-Shokeir syndrome Fetal akinesia/hypokinesia syndrome

TABLE 5 Severity of polyhydramnios in relation to semi-quantitative measurements of AFV

Degree	SDP (cm)	AFI (cm)	Frequency	PNM	Anomalies
Mild	> 8	> 24(a); 25–30(b)	68%	50	≤6%
Moderate	> 11	> 32(a); 30–35(b)	19%	190%	>45%
Severe	> 15	> 44(a); 35.1\(b)	13%	540	>65%

Abbreviation: PNM, perinatal mortality rate (number of perinatal deaths per 1000 births)
Sources: a: Harman CR,[1] b: Pri-Paz, S[25]

- Polihidramniyos derecesi ile kötü fetal prognoz ilişkili..
- Tek vertikal cep (SDP) ve AFI: ikisi de yüksek ise fetal prognoz, sadece SDP yüksek olgulara göre daha yüksek.
- ✓ *AFI polihidramniyos'ta daha prognostik*

Komplikasyonlar

- Maternal solunum sorunları
- Preeklampsi (ayna sendromu)
- Preterm doğum
- Preterm EMR
- Fetal malprezentasyon
- Fetal makrozomi
- Umbilikal kord prolapsusu
- Ablasyo plasenta
- Uterin atoni

Klinik Yaklaşım

- Ultrason ile detaylı fetal anatomik inceleme,
- Fetal anatomik bir defekt tespitinde fetal karyotip analizi
- Fetal biyometre
- Fetal enfeksiyon bulguları (hepatosplenomegali, karaciğer ve intrakraniyal kalsifikasyonlar) veya fetal hidrops.
- Fetal anemi öngörüsü açısından orta serebral arter tepe sistolik hız ölçümleri
- Plasentanın renkli veya power Doppler incelemesi (plasental hemanjiom)
- Maternal DM tespiti..pre- veya gestasyonel diabet taraması

Ko-morbid durumlarla birlikte ise

- Konjenital anomaliler ve/veya IUGR saptanırsa: kromozom analizi veya mikroarray testi, konjenital enfeksiyonlar açısından serolojik inceleme (TORCH)
- Fetal hidrops saptanırsa: İmmün etiyoloji ise İndirek Coombs testi, TORCH serolojisi, kalp yetmezliği bulgularının (TY, UV pulsasyonu) araştırılması, diğer nedenlere yönelik yaklaşım

İzole Polihidramniyos

- Perinatal mortalite, normal amniyon sıvısı olan olgulara göre 3-5 kat daha fazla.

Morris R et al. Association and prediction of amniotic fluid measurements for adverse pregnancy outcome: systematic review and meta-analysis. *BJOG.* 2014;121(6):686–699.

- Antenatal idiopatik denilen olguların neonatal incelemesinde %25 olguda neden belli (Fetal Diag Ther 2012)
- Fetal hareket takibi ve haftalık NST
- 3-4 haftada bir fetal büyüme izlemi
- 2-3 haftada bir AFI izlemi
- Termde doğum

Geçici Polihidramniyos

- Çoğunluğunda görülür ve hafif şiddettedir.
- İdiopatik neden daha ağırlıklı ve fetal prognoz daha iyi.
- Kalıcı polihidramniyos olgularında, geçici olgulara göre:

✓ konjenital anomali, anöploidi

✓ preterm doğum

✓ preeklampsi

✓ intrauterin ve neonatal fetal kayıp daha fazla oranda görülmektedir.

Golan A et al. Gynecol Obstet Invest 1994

Şiddetli ve semptomatik polihidramniyos'ta Amniyodrenaj

- Steril saha temizliği
- Lokal saha anestezisi
- USG eşliğinde 18 G spinal iğne ile amniyon kavitesine giriş
- 20 dak içinde 1000cc den fazla drenaj yapılmamalı veya tek işlemde 2000-2500 cc den fazla alınmamalı,
- Vakumlu drenaj sistemleri kullanılabilir 100-125ml/saat
- Profilaktik indometazin
- AS normal değerlere ulaştığında veya komplikasyon (preterm eylem, koryoamniyotik separasyon, hasta rahatsızlığı) geliştiğinde işlem sonlandırılmalı,
- Kronik olgularda ortalama 2 işlem gerekebilmekte
- AS takibi işlem sonrası 1-3 hafta arası bakılmalı
- Semptomları azaltsa da, gebeliği uzattığına dair kesin kanıt yok.

Eliot JP et al. Obstet Gynecol 1991.
Leung WC et al. Ultrasound Obtet Gynecol 2004.

Amnioreduction in the management of polyhydramnios complicating singleton pregnancies

Jan Elizabeth Dickinson, MD; Yan Yan Tjioe, MBBS; Emily Jude; Daniel Kirk; Malcolm Franke; Elizabeth Nathan, BSc

OBJECTIVE: The purpose of this study was to evaluate the contribution of amnioreduction to the management of singleton pregnancies that are complicated by symptomatic polyhydramnios.

STUDY DESIGN: Retrospective review of all singleton pregnancies that received at least 1 amnioreduction for polyhydramnios from 2000-2012 at a single obstetric unit that provides a statewide service. The indications, procedural techniques, and pregnancy outcomes were evaluated.

RESULTS: One hundred thirty-eight women with polyhydramnios (maximal vertical pocket [MVP], ≥8 cm) had 271 amnioreduction procedures during the study period. The median gestation at the first drain was 31.4 weeks (interquartile range, 28.4–34 weeks) and a median of 1 procedure (interquartile range, 1–2 procedures) was performed per pregnancy. Sixty-three women (45.6%) required >1 amnioreduction. The median volume removed per pregnancy was 2100 mL (interquartile range, 1500–4260 mL). The median duration from the first amnioreduction until delivery was 26 days (interquartile range, 15–52.5 days). There was no significant association between gestation at delivery and the volume per procedure or total volume that was removed. Earlier gestation at first drain was associated positively with earlier gestations at delivery. In 4.1% of amnioreduction procedures (11/271 procedures), there was an unplanned preterm birth within 48 hours. The median gestation at delivery was 36.4 weeks (interquartile range, 34–38 weeks). The final diagnoses were gastrointestinal malformations (21%), idiopathic polyhydramnios (20.3%), chromosomal anomaly (15.2%), syndromic condition (13.7%), and neurologic condition (8%).

CONCLUSION: Amnioreduction has a useful role in the management of polyhydramnios in singleton pregnancies. Complications are uncommon, and delivery typically occurs near term.

Key words: amnioreduction, fetus, polyhydramnios, pregnancy

Cite this article as: Dickinson JE, Tjioe YY, Jude E, et al. Amnioreduction in the management of polyhydramnios complicating singleton pregnancies. Am J Obstet Gynecol 2014;211:434.e1-7.

TABLE 1

Maternal and procedural characteristics (n = 138)

Variable	Measure
Maternal age, y[a]	32 (27–35.5)
Parity, n[a]	1 (1–2)
Male sex, n	76 (55.1%)
Gestation at first amnioreduction, wk[a]	31.4 (28.4–34)
Median amnioreduction per pregnancy, n[a]	1 (1–2)
Volume removed per pregnancy, mL[a]	2100 (1500–4260)
Gestation at delivery, wk[a]	36.4 (34–38)
Interval first drain-delivery, wk[a]	3.7 (2.1–7.5)
Cesarean delivery	72 (52.2%)

[a] Data are given as median (interquartile range).

TABLE 3

Procedural complications of amnioreduction

Outcome	n (%)[a]
Preterm premature rupture of membranes ≤48 hr after drain	3 (1.1)
Delivery ≤48 hr after drain	11 (4.1)
Abruption	0
Bradycardia that required delivery	0
Chorioamnionitis	0
Fetal death <24 hr after drain[b]	1 (0.4)

[a] Total, 271; [b] Trisomy 18.

Dickinson. Amnioreduction for polyhydramnios. Am J Obstet Gynecol 2014.

FIGURE 1

Gestational age at first amnioreduction

Dickinson. Amnioreduction for polyhydramnios. Am J Obstet Gynecol 2014.

TABLE 4

Pregnancy outcomes

Outcome	n (%)[a]
Delivery at ≤34 wks' gestation	26 (18.8)
Delivery at ≤37 wks' gestation	71 (51.4)
Fetal death	12 (8.7)
Termination	4 (2.9)
Stillbirth	16 (11.6)
Neonatal death	20 (14.5)
Infant death	4 (2.9)
Total loss rate	40 (29)

[a] Total, 138.

Dickinson. Amnioreduction for polyhydramnios. Am J Obstet Gynecol 2014.

TABLE 2

Cause of the cases of polyhydramnios that required amnioreduction

Condition	Total, n (%)[a]	Amnioreduction, n (%)[b]
Fetal abnormality	107 (77.5)	230 (84.9)
Gastrointestinal	29 (21)	58
Tracheoesophageal fistula	9	
Duodenal atresia	11	
Meconium peritonitis	6	
Chromosomal	21 (15.2)	36
Trisomy 21	10	
Trisomy 18	4	
Syndromes	19 (13.7)	49
Noonan	4	
Charge	3	
Beckwith	2	
Costello	2	
Neurologic	11 (8)	29
Fetal akinesia	4	
Myotonic dystrophy	2	
Idiopathic	28 (20.3)	33 (12.2)
Diabetes mellitus		
Type 1	3	3
Type 2	3	4

TTTS Tedavisinde Amniyodrenaj

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ISUOG Practice Guidelines
pregnancy

Treatment of TTTS

- Laser ablation is the treatment of choice for TTTS at Quintero stages II and above (GRADE OF RECOMMENDATION: A).
- Conservative management with close surveillance or laser ablation can be considered for Quintero stage I (GRADE OF RECOMMENDATION: B).
- When laser treatment is not available, serial amnioreduction is an acceptable alternative after 26 weeks' gestation (GRADE OF RECOMMENDATION: A).

TTTS diagnosed before 26 weeks of gestation is best treated by laser ablation, as the evidence suggests that it leads to better outcomes compared with amnioreduction or septostomy[85] (EVIDENCE LEVEL: 1+). It is generally

Prostaglandin Sentez İnhibitörü İNDOMETAZİN

- Semptomatik, şiddetli polihidramniyosta etkili
- Fetal idrar üretimini azaltarak etki göstermekte (ilk 24 saatte AFI de azalma)
- 26-27 haftadan 32 gebelik haftasına kadar kullanım.
- 25 mg 6 saatte bir
- Uzun kullanımı nadir. 3 günü geçirmemeli
- Uzun kullanımda kullanımda fetal ekokardiyografi (duktus kapanması açısından izlem)
- Preterm doğumu önleyebilir.
- Bütün çalışmalar retrospektif
- Çalışmalarda maternal ve neonatal yan etkiye rastlanılmamış

Sabrınız için Teşekkürler