Gebelerde Viral Hepatit B

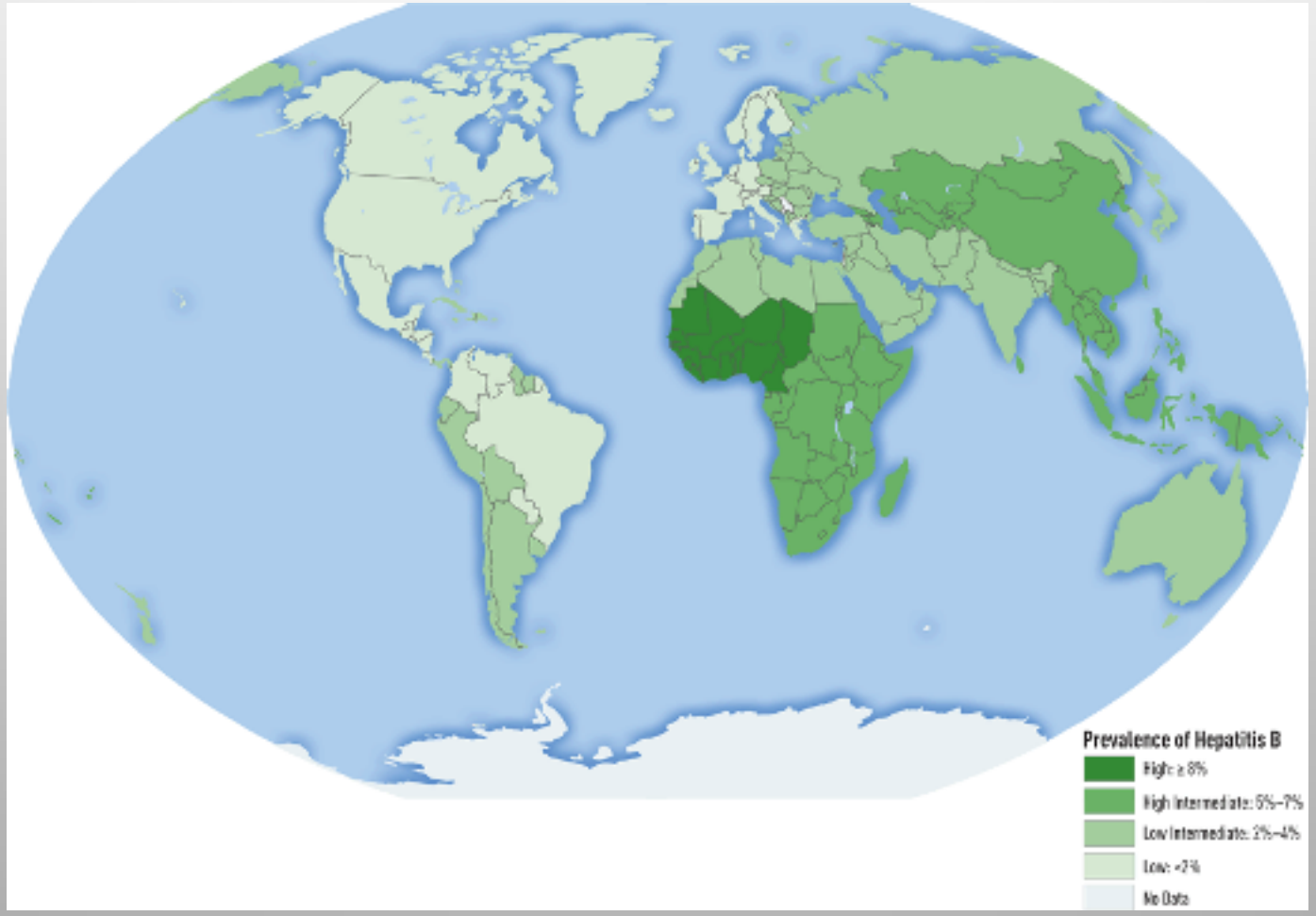
Ediz Tütüncü

6. Türkiye EKMUD Bilimsel Platformu

8 Nisan 2017, Antalya

25 yaşında kadın hasta, kronik hepatit B taşıyıcısı, hiçbir ek sorunu yok…

“Çocuk sahibi olabilir miyim?”
“Hepatit B gebeliğimi etkiler mi?”
“Gebe kalmak hastalığımı ilerletir mi?”
“Bebeğime bulaşır mı?”



>240 milyon kronik hepatit B
Asya ve Afrika'da yetişkin nüfusun %8-10'u

Clinics in Liver Disease

Volume 11, Issue 4, November 2007, Pages 945–963

Chronic Hepatitis B

Hepatitis B in Pregnancy

Maya Gambarin-Gelwan, MD

Yeni edinilen HBV enfeksiyonu olgularının %50'si vertikal bulaşla gerçekleşmektedir.

Gambarin Gelwan M. Clin Liver Dis 2007;11:945

Gebelikte KHB'nin yönetiminde

- HBV'nin maternal ve fetal sağlığa etkisi,
- Gebeliğin HBV enfeksiyonunun seyrine etkisi
- Gebede KHB'nin antiviral tedavisi,
- Perinatal bulaşın önlenmesi

HBV’nin maternal ve fetal sağlığa etkisi

The impact of maternal HBsAg carrier status on pregnancy outcomes: A case–control study

Ka Yu Tse, Lai Fong Ho, Terence Lao
Department of Obstetrics and Gynaecology, Queen Mary Hospital, The University of Hong Kong, 102, Pokfulum Road, Hong Kong, Hong Kong

- Erken doğum tehditi,
- Erken membran rüptürü,
- Prematürite riskinde artış,
- Antepartum kanama,
- Düşük doğum ağırlığı

Tse KY. J Hepatol 2005;43:771

Digestion 2011;83:76–82
(DOI:10.1159/000320455)

Prevalence of Hepatitis B among Pregnant Women and Its Impact on Pregnancy and Newborn Complications at a Tertiary Hospital in the Eastern Part of Germany

Lobstein S.[a, b] · Faber R.[c] · Tillmann H.L.[b, d]

[a]Pediatrics Department, Municipal Hospital Neustadt, Dresden, [b]Second Department of Medicine, and [c]Gynecology Department, University Leipzig, Leipzig, Germany; [d]Duke Clinical Research Institute, Duke University, Durham, N.C., USA

Erken doğum, doğum ağırlığı, konjenital anomali, prematürite insidansı ya da perinatal mortalite ile ilişkisi kurulamamıştır.

Lobstein S. Digestion 2011;83:76

ELSEVIER

Journal of Hepatology 47 (2007) 46–50

Journal of Hepatology

www.elsevier.com/locate/jhep

Maternal hepatitis B infection and gestational diabetes mellitus☆

Terence T. Lao[1,2,3,*], Ben C.P. Chan[1,3], Wing-Cheong Leung[1,3,†], Lai-Fong Ho[3], Ka-Yu Tse[1,3]

[1]*Department of Obstetrics and Gynaecology, The University of Hong Kong, Hong Kong, China*
[2]*Research Centre of Heart, Brain, Hormone and Healthy Aging, The University of Hong Kong, Hong Kong, China*
[3]*Department of Obstetrics and Gynaecology, Queen Mary Hospital, Pokfulam Road, Hong Kong, China*

13683 gebe, 1138 (%8,3) KHB, 1998-2001

Gestasyonel DM prevalansı OR 1,24

Lao TT et al. J Hepatol 2007;47:46

The outcomes of pregnancy in patients with cirrhosis: a population-based study

Abdel Aziz M. Shaheen, Robert P. Myers

First published: 28 October 2009 Full publication history

DOI: 10.1111/j.1478-3231.2009.02153.x View/save citation

Cited by: 21 articles Citation tools

View issue TOC
Volume 30, Issue 2
February 2010
Pages 275–283

Perinatal komplikasyonlar,

- plasental ablasyon,
- gestasyonel hipertansiyon,
- peripartum kanama

Fetal komplikasyonlar,

- büyüme geriliği,
- prematür doğum,
- fetal mortalite

Shaheen AA. Liver Int 2010;30:275

The outcomes of pregnancy in patients with cirrhosis: a population-based study

Abdel Aziz M. Shaheen, Robert P. Myers

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View issue TOC
Volume 30, Issue 2
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Pages 275–283

Sirotik gebeler, perinatal komplikasyonlar ve kötü maternal ve fetal sonuçlar açısından risk altındadır.

Shaheen AA. Liver Int 2010;30:275

Gebeliğin HBV enfeksiyonunun seyrine etkisi

Hepatol Int (2008) 2:370–375
DOI 10.1007/s12072-008-9063-4

ORIGINAL ARTICLE

Chronic hepatitis B virus (HBV) infection in pregnancy

Hui-Hui Tan · Hock-Foong Lui · Wan-Cheng Chow

Gebelikte endojen adrenal kortikosteroid düzeyleri üçüncü trimesterda en yüksek düzeylere ulaşır ve "immün toleran" bir durum yaratır.

Tan HH et al. Hepatol Int 2008;2:370

Hepatol Int (2008) 2:370–375
DOI 10.1007/s12072-008-9063-4

ORIGINAL ARTICLE

Chronic hepatitis B virus (HBV) infection in pregnancy

Hui-Hui Tan · Hock-Foong Lui · Wan-Cheng Chow

Postpartum dönemde kortizol düzeylerindeki ani düşüş, akut steroid çekilmesine benzer biçimde hepatik alevlenmelere yol açabilir.

Tan HH et al. Hepatol Int 2008;2:370

Hepatol Int (2008) 2:370–375
DOI 10.1007/s12072-008-9063-4

ORIGINAL ARTICLE

Chronic hepatitis B virus (HBV) infection in pregnancy

Hui-Hui Tan · Hock-Foong Lui · Wan-Cheng Chow

Gebelikte HBV DNA düzeylerinde dikkat çekici bir değişiklik olmamakla birlikte ALT düzeylerinde bir artış görülebilmektedir.

HBeAg pozitif hastalarda spontan Hbe serokonversiyonu ile ilişkili bulunmuştur.

Tan HH et al. Hepatol Int 2008;2:370

doi:10.1111/j.1440-1746.2006.04198.x

HEPATOLOGY

Hepatitis B post-partum e antigen clearance in hepatitis B carrier mothers: Correlation with viral characteristics

Ho-Hsiung Lin,* Wen-Yih Wu,* Jia-Horng Kao† and Ding-Shin Chen†

*Departments of Obstetrics and Gynecology, †Internal Medicine and Hepatitis Research Center, National Taiwan University College of Medicine and National Taiwan University Hospital, Taipei, Taiwan

HBeAg pozitif hastalarda %12-17 sıklıkta spontan Hbe serokonversiyonu ile ilişkili bulunmuştur.

Lin HH et al. J Gastroenterol Hepatol 2006;21:605

Hepatol Int (2008) 2:370–375
DOI 10.1007/s12072-008-9063-4

ORIGINAL ARTICLE

Chronic hepatitis B virus (HBV) infection in pregnancy

Hui-Hui Tan · Hock-Foong Lui · Wan-Cheng Chow

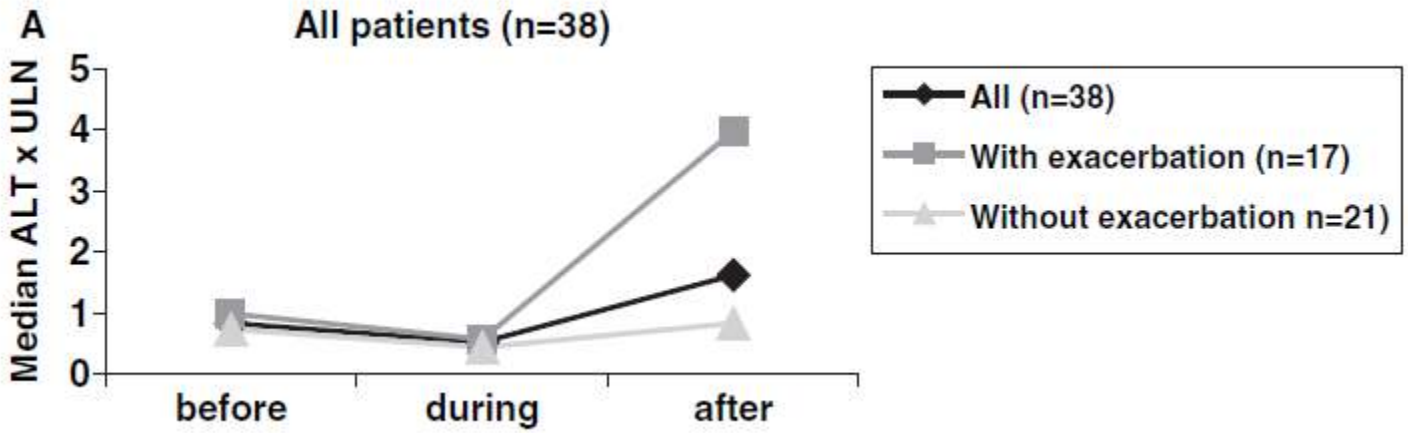
Peripartum dönemdeki HBeAg serokonversiyonu oranındaki artış “postpartum immün rebound” ile ilişkili olabilir.

Tan HH et al. Hepatol Int 2008;2:370

Journal of Viral Hepatitis, 2008, **15**, 37–41 doi:10.1111/j.1365-2893.2007.00894.x

Exacerbation of chronic hepatitis B infection after delivery

M. J. ter Borg, W. F. Leemans, R. A. de Man and H. L. A. Janssen *Department of Gastroenterology and Hepatology, Erasmus Medical Center Rotterdam, Rotterdam, the Netherlands*



Gebelik sonrası immün reaktivasyon karaciğer hastalığının aktivitesinde dikkat çekici artışla birliktedir.

ter Borg MJ et al. J Viral Hepat 2008;15:37

Journal of Viral Hepatitis, 2008, **15**, 37–41 doi:10.1111/j.1365-2893.2007.00894.x

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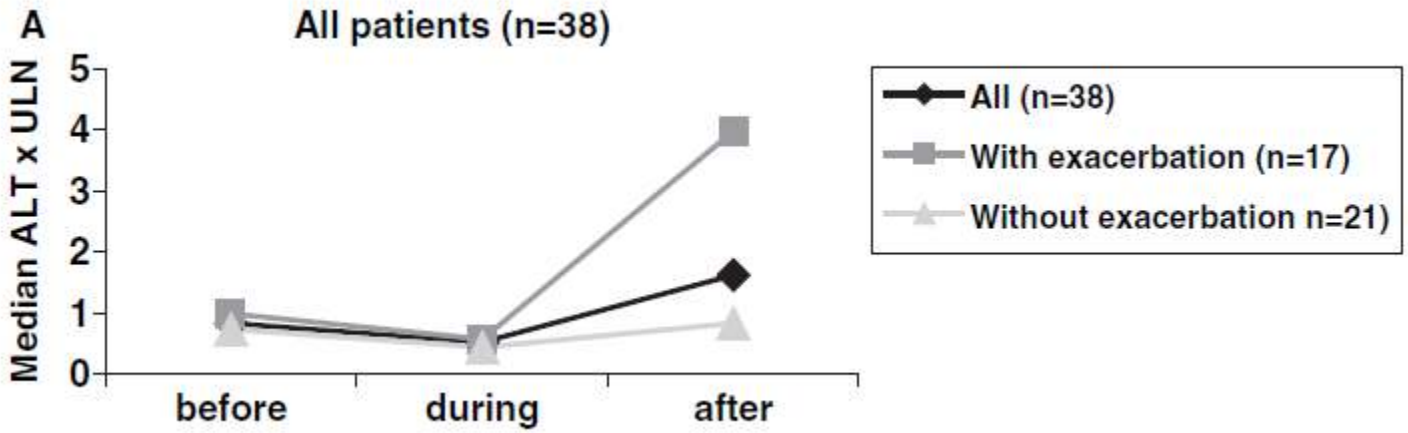

Genellikle asemptomatik ve spontan düzelme ile sonuçlanır.

ter Borg MJ et al. J Viral Hepat 2008;15:37

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Fax: +86-10-85381893
E-mail: wjg@wjgnet.com www.wjgnet.com

World J Gastroenterol 2004;10(15):2305-2306
World Journal of Gastroenterology
Copyright © 2004 by The WJG Press ISSN 1007-9327

• CASE REPORT •

Pregnant woman with fulminant hepatic failure caused by hepatitis B virus infection: A case report

Yue-Bo Yang, Xiao-Mao Li, Zhong-Jie Shi, Lin Ma

Fulminan karaciğer yetmezliği ya da hepatik dekompansasyona yol açabilir.

Yang YB et al. World J Gastroenterol 2004;10:2305

Liver Disease in Pregnancy

Ayaz Matin, MD, David A. Sass, MD, AGAF*

Gebelikte gerçekleşen immünolojik, metabolik ve hemodinamik değişikliklerin eşlik eden karaciğer hastalığını ilerletmesi olasıdır,

Ancak klinik tablonun siroza ilerlemesi beklenmez.

Matin A et al. Gastroenterol Clin N Am 2011;40:335

Gebede KHB'nin antiviral tedavisi

- Doğurganlık çağındaki kadında KHB yönetimi

- Gebelik planlayan kadında KHB yönetimi

- KHB tedavisi alırken gebe kalan kadınların yönetimi

Gebede KHB'nin antiviral tedavisi

Kronik hepatit B tedavi endikasyonu

- HBV DNA düzeyi,
- Serolojik durum,
- Karaciğer hasarı

Anne ve fetüsün sağlığı ayrı ayrı dikkate alınmalıdır.

Doğurganlık çağındaki kadında KHB yönetimi

Yakın zamanda çocuk sahibi olmayı planlıyor ise tedavi ertelenebilir,

Sirotik olmayan hasta,
Hastalık aktivitesi düşük,
HBV DNA ve ALT düzeyleri yüksek değil

Sirotik hastalar tedavi edilmelidir.

Lok ASF et al. J Hepatol 2012;57:167

Doğurganlık çağındaki kadında KHB yönetimi

Yakın zamanda çocuk sahibi olmayı planlamıyor, tedavi endikasyonu varsa

48 hafta süreli IFN tedavisi ya da
TDF ile tedavi edilmelidir.

Lok ASF et al. J Hepatol 2012;57:167

Antiviral tedavi alırken gebe kalan hastalar

Tedaviyi kesmek gebede alevlenme açısından risk doğururken, tedavi devamı fetüs açısından riskli olabilir.

- Sirotik olmayan gebelerde tedavinin kesilmesi düşünülebilir,
- Alternatif ilaçla (TDF) tedavinin devamı

Lok ASF et al. J Hepatol 2012;57:167

"Tedavi almıyorum, gebelik planlayabilir miyim?"

Hastalık aktivitesi,
HBV DNA ve ALT düzeyleri
Siroz?

Tedavi endikasyonu var
Siroz yok

Tedavi endikasyonu var
Siroz var

Tedavi ertelenir, gebelik sonrası tedavi

Sirotik hastalar tedavi edilmelidir

48 hafta süreli IFN tedavisi ya da TDF ile tedavi

"Tedavi alıyorum, gebelik planlayabilir miyim?"

Siroz?

Siroz yok

Siroz var

Tedaviye devam

Tedaviye devam
İlaç değişimi

Tedavi kesilerek izlem

“Tedavi alıyorum, gebe kaldım?”

Siroz?

Siroz yok

Siroz var

Tedaviye devam

Tedaviye devam
İlaç değişimi

Tedavi kesilerek izlem

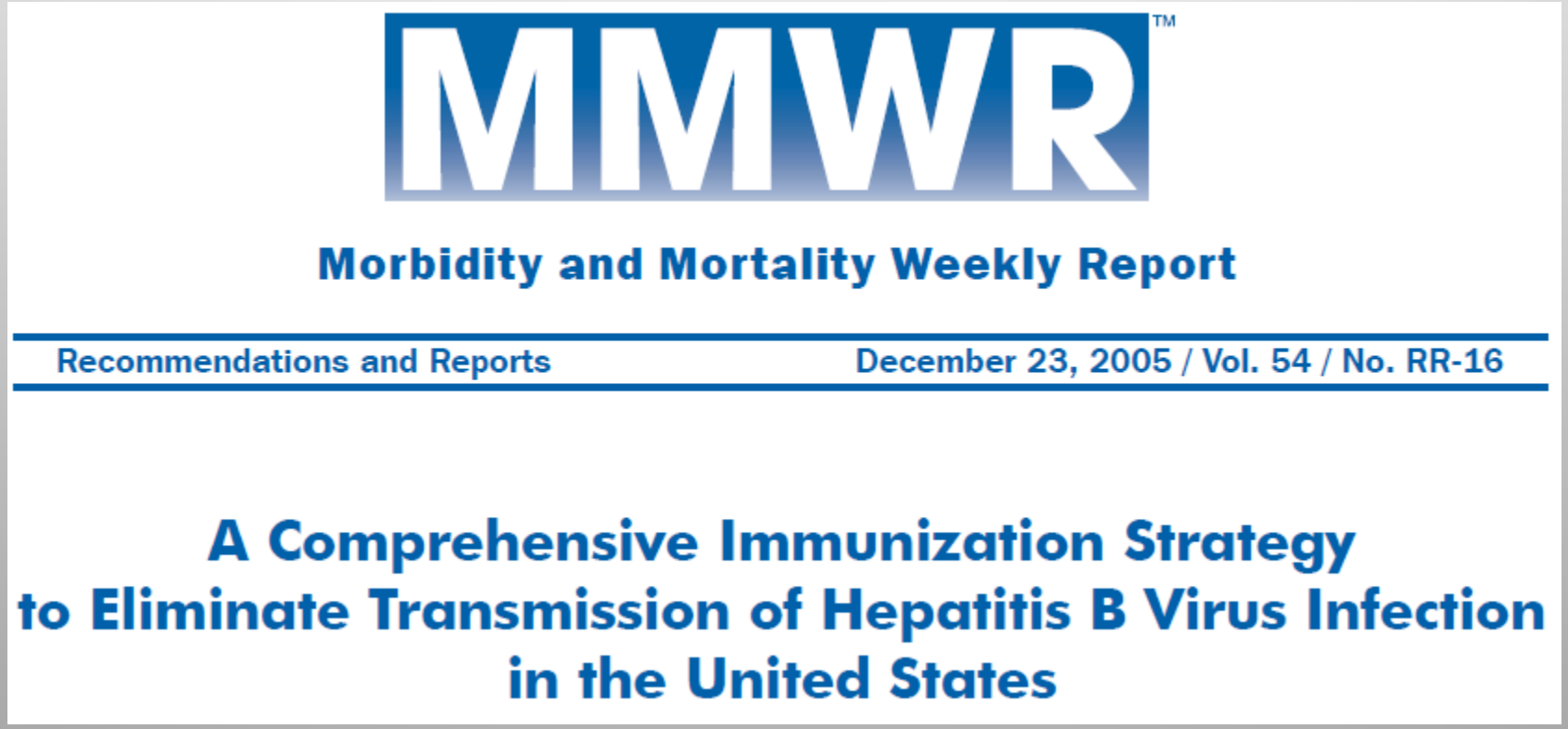
Antiviral tedavi endikasyonu olmayan gebeler alevlenmeler yönünden yakından izlenmelidir.

- Gebelikte ve sonrasında altı ay süreyle üç ayda bir ALT ve HBV DNA,
- 26-28. haftada HBV DNA

Yüksek viral yükü olan hastalarda perinatal bulaşın önlenmesi için tedavi başlanmalıdır.

Anneden bebeğe bulaş

Anneden bebeğe bulaş



MMWR™

Morbidity and Mortality Weekly Report

Recommendations and Reports — December 23, 2005 / Vol. 54 / No. RR-16

A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States

HBsAg pozitif annelerden bebeklerine bulaş olasılığı %90'a kadar ulaşmaktadır.

Mast EE et al. MMWR Recomm Rep 2006;55(RR-16):1

Perinatal bulaş

Universal maternal tarama uygulamaları ve infantların pasif ve aktif immünizasyonu ile anneden bebeğe bulaş %90-95 olasılıkla engellenmektedir.

Doğumdan sonraki 12 saat içinde 0,5 ml **HBIg** ve **Hepatit B aşısı**, 0, 1 ve 6. aylarda

Mast EE et al. MMWR Recomm Rep 2006;55(RR-16):1

Outcomes of Infants Born to Women Infected With Hepatitis B

Sarah Schillie, MD, MPH, MBA[a], Tanja Walker, MPH[b], Steven Veselsky, MPH[a], Susan Crowley, BA[c], Cristina Dusek, RN, BSN[c], Julie Lazaroff, MPH[a], Sandra A. Morris, MPH[c], Kenneth Onye, MPH[a], Stephen Ko, MD, MA, MPH, MDIV[a], Nancy Fenlon, RN, MS[b], Noele P. Nelson, MD, PhD, MPH[a], Trudy V. Murphy, MD[a]

abstract

BACKGROUND AND OBJECTIVES: Perinatal exposure is an important mode of hepatitis B virus (HBV) transmission, resulting in chronic disease in ~90% of infected infants. Immunoprophylaxis recommended for infants born to hepatitis B surface antigen–positive mothers reduces up to 95% of perinatal HBV infections. We sought to identify factors associated with perinatal HBV transmission.

17951 anne-bebek, 2007-2013 prospektif

İmmünprofilaksiye rağmen bebeklerin %1,1'inde perinatal bulaş önlenememiş

- HBeAg pozitifliği,
- HBV DNA >2000 IU/ml,
- Genç gebelik yaşı

Schillie S et al. Pediatrics 2015;135:e1141

Outcome of Perinatal Hepatitis B Virus Exposure Is Dependent on Maternal Virus Load

Robert D. Burk, Lu-Yu Hwang, Gloria Y. F. Ho, David A. Shafritz, and R. Palmer Beasley

Marion Bessin Liver Research Center and Departments of Pediatrics, Microbiology and Immunology, Obstetrics and Gynecology, Medicine, Cell Biology, and Epidemiology and Social Medicine, Albert Einstein College of Medicine, Bronx, New York; Center for Infectious Diseases, School of Public Health and Graduate School of Biomedical Science, University of Texas, Health Science Center at Houston; and American Medical Research Center, Taipei, Taiwan, Republic of China

To evaluate the role of maternal hepatitis B virus (HBV) DNA levels in perinatal infection, two nested case-control studies were done within a cohort of 773 hepatitis B surface antigen (HBsAg)–positive Taiwanese women and their infants. As serum HBV DNA levels increased from <0.005 to ≥1.4 ng/mL among the hepatitis B e antigen (HBeAg)–positive mothers, the odds ratio (OR) for having a persistently infected infant increased from 1.0 to 147.0 (*P* for trend < .001). Among HBeAg-negative mothers, the OR for having a persistently infected infant was 19.2 (95% confidence interval, 2.3–176.6) in mothers with high versus low levels of serum HBV DNA. A logistic regression analysis identified maternal HBV DNA to be a stronger independent predictor of persistent infection than HBeAg status. Thus, perinatal exposure to high levels of maternal HBV DNA is the most important determinant of infection outcome in the infant.

773 HBsAg pozitif anne ve bebek,

HBV DNA <5 pg/ml

HBV DNA >1400 pg/ml

Enfekte infant için

OR=147

Burk RD et al. J Infect Dis 1994;170:1418

RESEARCH

Perinatal transmission of hepatitis B virus: an Australian experience

Elke Wiseman, Melissa A Fraser, Sally Holden, Anne Glass, Bronwynne L Kidson, Leon G Heron, Michael W Maley, Anna Ayres, Stephen A Locarnini and Miriam T Levy

Perinatal transmission is the predom-

ABSTRACT

Prospektif gözlemsel çalışma, 2002-2008

313 HBsAg (+) gebe,
%29 HBeAg (+), %68 HBV DNA (+)

Perinatal bulaş %3 (n=4),
HBeAg (+) gebelerde %7,
HBV DNA (+) gebelerde %9

Wiseman E et al. Med J Aust 2009;190:489

RESEARCH

Perinatal transmission of hepatitis B virus: an Australian experience

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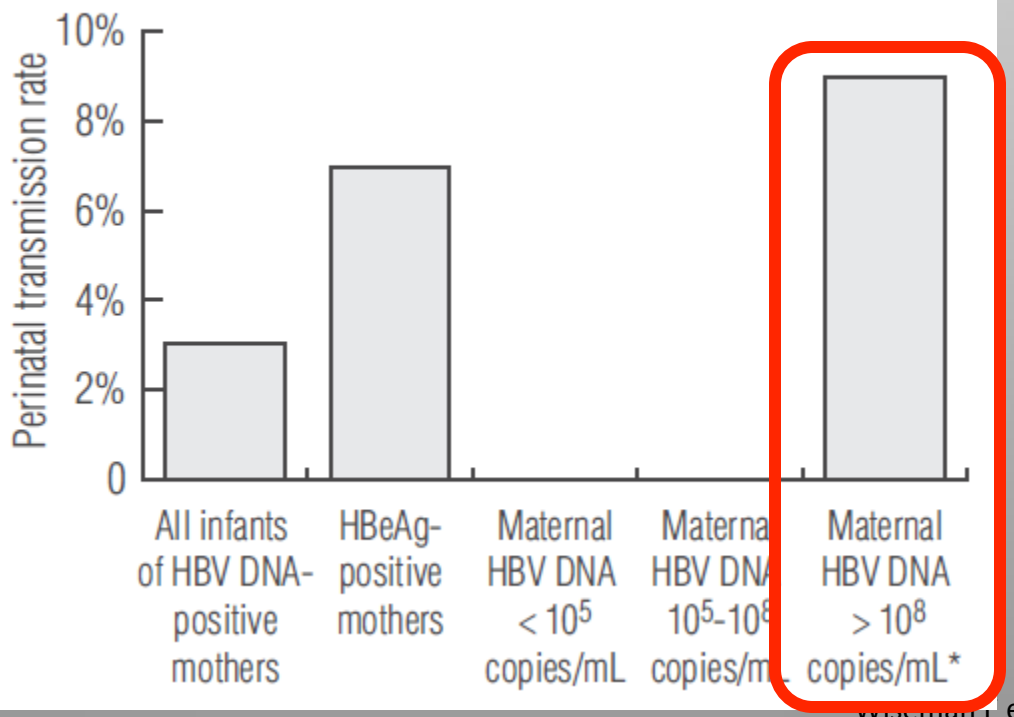
Perinatal transmission is the predom-

ABSTRACT

3 Perinatal transmission rates



Wiseman E et al. Med J Aust 2009;190:489

Research Article

EASL EUROPEAN ASSOCIATION FOR THE STUDY OF THE LIVER | JOURNAL OF HEPATOLOGY

Mother-to-infant transmission of hepatitis B virus infection: Significance of maternal viral load and strategies for intervention

Wan-Hsin Wen[1,2], Mei-Hwei Chang[3,4], Lu-Lu Zhao[5], Yen-Hsuan Ni[3], Hong-Yuan Hsu[3,6], Jia-Feng Wu[3], Pei-Jer Chen[4,7], Ding-Shinn Chen[4,7], Huey-Ling Chen[3,4,6,*]

[1]*Department of Pediatrics, Cardinal Tien Hospital, New Taipei City, Taiwan;* [2]*School of Medicine, Fu-Jen Catholic University, New Taipei City, Taiwan;* [3]*Department of Pediatrics, Hospital and College of Medicine, National Taiwan University, Taipei, Taiwan;* [4]*Hepatitis Research Center, Hospital and College of Medicine, National Taiwan University, Taipei, Taiwan;* [5]*Department of Pediatrics, Buddhist Tzu Chi General Hospital Taipei Branch, New Taipei City, Taiwan;* [6]*Department of Primary Care Medicine, Hospital and College of Medicine, National Taiwan University, Taipei, Taiwan;* [7]*Department of Internal Medicine, Hospital and College of Medicine, National Taiwan University, Taipei, Taiwan*

303 anne-bebek

81 HBeAg (+)

222 HBeAg (-)

Wen WH et al. J Hepatol 2013;59:24

Research Article

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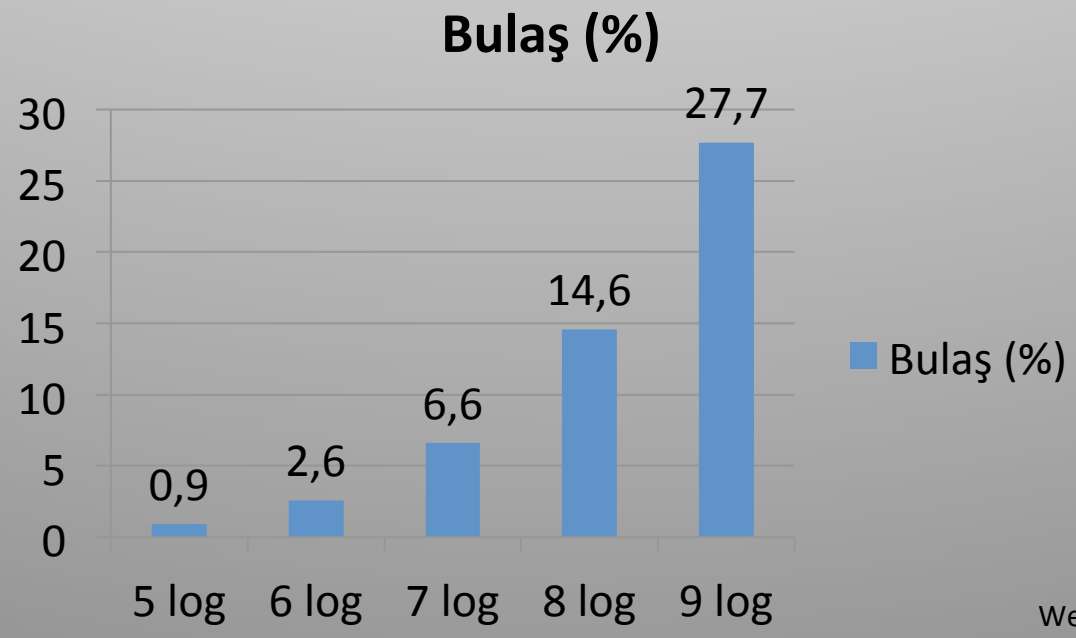

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Maternal viral yük $\geq 10^7$ kopya/ml ise, immünprofilaksiye rağmen çocuklarda enfeksiyon riski artıyor.

Wen WH et al. J Hepatol 2013;59:24

JOURNAL OF VIRAL HEPATITIS
JVH

Journal of Viral Hepatitis, 2012, **19**, e18–e25 doi:10.1111/j.1365-2893.2011.01492.x

Virologic factors associated with failure to passive–active immunoprophylaxis in infants born to HBsAg-positive mothers

H. Zou,[1] Y. Chen,[1] Z. Duan,[1] H. Zhang[2] and C. Pan[3] [1]*Artificial Liver Center, Beijing Youan Hospital, Capital Medical University, Beijing, China;* [2]*Department of Obstetrics and Gynecology, Beijing Youan Hospital, Capital Medical University, Beijing, China; and* [3]*Division of Liver Diseases, Mount Sinai Hospital, Mount Sinai School of Medicine, New York, NY, USA*

2007-2010, 869 anne-bebek çifti,
Tüm yenidoğanlara aynı pasif-aktif immünizasyon

%3,1 immünizasyon başarısızlığı

Zou H et al. J Viral Hepat 2012;19:e18

JOURNAL OF VIRAL HEPATITIS
JVH

Journal of Viral Hepatitis, 2012, **19**, e18–e25 doi:10.1111/j.1365-2893.2011.01492.x

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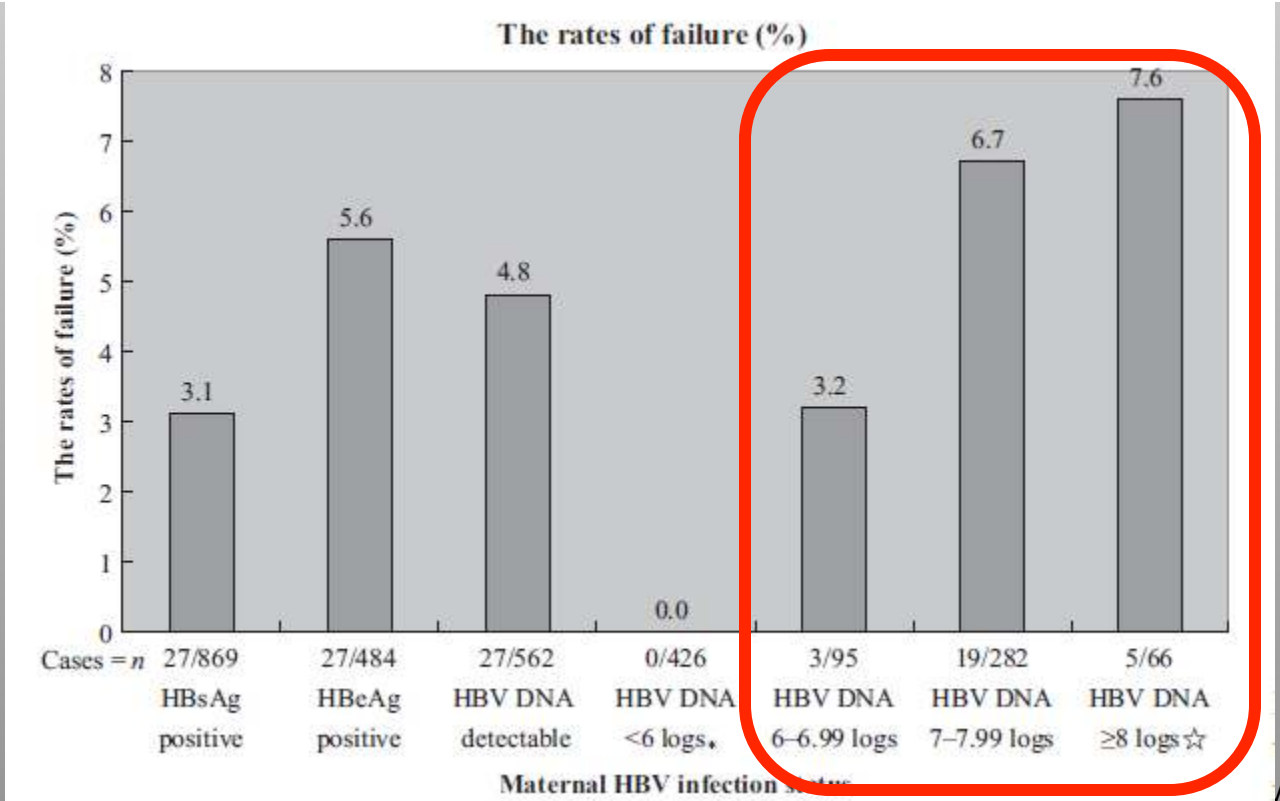

Viral Hepat 2012;19:e18

JOURNAL OF VIRAL HEPATITIS
JVH

Journal of Viral Hepatitis, 2012, **19**, e18–e25 doi:10.1111/j.1365-2893.2011.01492.x

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>6 log kopya/ml HBV DNA düzeyleri, profilaksinin etkinliğini azaltmaktadır.

Zou H et al. J Viral Hepat 2012;19:e18

CLINICAL GASTROENTEROLOGY AND HEPATOLOGY 2012;10:452–459

REVIEW

An Algorithm for Risk Assessment and Intervention of Mother to Child Transmission of Hepatitis B Virus

CALVIN Q. PAN,* ZHONG-PING DUAN,‡ KALYAN R. BHAMIDIMARRI,§ HUAI-BIN ZOU,‡ XIAO-FENG LIANG,‖ JIE LI,¶ and MYRON J. TONG#

*Division of Liver Diseases, Mount Sinai Medical Center, Mount Sinai School of Medicine, New York, New York; ‡Artificial Liver Center, Beijing Youan Hospital, Capital Medical University, Beijing, China; §Center for Liver Disease, University of Miami-Miller School of Medicine, Miami, Florida; ‖National immunization Program, Chinese Centre for Disease Control and Prevention, Beijing, China; ¶Public Health College, Beijing University Medical School, Beijing, China; and #Pfleger Liver Institute and Division of Digestive Diseases, University of California School of Medicine, Los Angeles, California

Maternal HBV DNA düzeyi yenidoğan immünprofilaksisi başarısızlığının en önemli göstergesidir.

Pan CQ et al. Clin Gastroenterol Hepatol 2012;10:452

CLINICAL GASTROENTEROLOGY AND HEPATOLOGY 2012;10:452–459

REVIEW

An Algorithm for Risk Assessment and Intervention of Mother to Child Transmission of Hepatitis B Virus

CALVIN Q. PAN,* ZHONG-PING DUAN,‡ KALYAN R. BHAMIDIMARRI,§ HUAI-BIN ZOU,‡ XIAO-FENG LIANG,‖ JIE LI,¶ and MYRON J. TONG#

*Division of Liver Diseases, Mount Sinai Medical Center, Mount Sinai School of Medicine, New York, New York; ‡Artificial Liver Center, Beijing Youan Hospital, Capital Medical University, Beijing, China; §Center for Liver Disease, University of Miami-Miller School of Medicine, Miami, Florida; ‖National immunization Program, Chinese Centre for Disease Control and Prevention, Beijing, China; ¶Public Health College, Beijing University Medical School, Beijing, China; and #Pfleger Liver Institute and Division of Digestive Diseases, University of California School of Medicine, Los Angeles, California

HBV DNA >200000 IU/ml gebelerde perinatal bulaş riskini azaltmak için ek önlemlere gereksinim vardır.

Pan CQ et al. Clin Gastroenterol Hepatol 2012;10:452

Sorun

HBV DNA 6 log kopya/ml üzerinde ise profilaksi etkinliğini yitiriyor.

Journal of Viral Hepatitis, 2006, 13, 597–604 doi:10.1111/j.1365-2893.2006.00738.x

Antepartum immunoprophylaxis of three doses of hepatitis B immunoglobulin is not effective: a single-centre randomized study

J. Yuan,[1,2] J. Lin,[2] A. Xu,[2] H. Li,[2] B. Hu,[2] J. Chen,[2] J. Yao,[1] H. Dong[1] and M. Jiang[1] [1]*Department of Pathogenic Biology, Wuhan University School of Medicine, Wuhan; and* [2]*Department of Obstetrics and Gynecology, Huizhou Municipal Central Hospital, Huizhou, China*

250 HBeAg (+) gebe

117 gebeliğin 6, 7, 8. aylarında 400 IU HBIg IM

133 kontrol

Tüm yenidoğanlara HBIg ve aşı

Yuan J et al. J Viral Hepat 2006;13:597

Features	Before treatment of HBIg		At labour	
	Study group ($n = 117$)	Control group ($n = 133$)	Study group ($n = 117$)	Control group ($n = 133$)
Age* (mean ± SD)	25.99 ± 2.39 (26)	25.68 ± 2.67 (25)	25.99 ± 2.39 (26)	25.68 ± 2.67 (25)
Gravidity*	1.41 ± 0.87 (1)	1.29 ± 0.74 (1)	–	–
Parity*	1.02 ± 0.16 (1)	1.03 ± 0.17 (1)	–	–
ALT < 40 IU/L*	117	133	112	126
ALT >40, <60 IU/L*	0	0	3	3
ALT >60, <80 IU/L*	0	0	0	1
HBsAg positive*	117	133	117	133
Anti-HBs positive*	0	0	0	0
HBeAg positive*	117	133	117	133
Anti-HBe positive*	0	0	0	0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
HBsAg level*† (IU/L, mean ± SD)	131.58 ± 57.22[A]	142.64 ± 49.19	133.89 ± 55.04[B]	139.34 ± 47.93[C,D]
HBV DNA level*† ($\log_{10}$ copies/mL, mean ± SD)	7.62 ± 1.72[a]	7.25 ± 1.74	7.54 ± 1.70[b]	7.22 ± 1.80[c, d]
Premature rupture of membrane*	–	–	2	4
Premature birth*	–	–	0	1
Term delivery*	–	–	117	132
Spontaneous delivery*	–	–	88	102
Abdominal delivery*	–	–	29	31
Significant complications*	–	–	0	0

Antepartum HBIg uygulamasıyla maternal HBV DNA ve HBsAg düzeyleri değişmemiştir.

Yuan J et al. J Viral Hepat 2006;13:597

	At birth		1 year after birth			
	Study group ($n = 118$)	Control group ($n = 133$)	Study group ($n = 118$)		Control group ($n = 133$)	
HBV markers	Case (%)	Case (%)	Case (%)	PER† (%)	Case (%)	PER (%)
HBsAg+	27 (22.88)	32 (20.06)	13 (11.02)	87.76	17 (12.78)	85.80
Anti-HBs+	0 (0)	0 (0)	101 (85.59)	–	112 (84.21)	–
HBeAg+	9 (7.63)	8 (6.02)	6 (5.08)	–	7 (5.26)	–
Anti-HBe+	0 (0)	0 (0)	0 (0)	–	0 (0)	–
Anti-HBc+	2 (1.69)	2 (1.50)	6 (5.08)	–	7 (5.26)	–

Bebeklerde HBsAg pozitifliklerinde fark yoktur.
%11 vs %12,8 (p>0,05)

Yuan J et al. J Viral Hepat 2006;13:597

Journal of Viral Hepatitis, 2006, 13, 597–604 doi:10.1111/j.1365-2893.2006.00738.x

Antepartum immunoprophylaxis of three doses of hepatitis B immunoglobulin is not effective: a single-centre randomized study

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HBeAg (+) gebelerde antepartum HBIg uygulaması perinatal bulaşın önlenmesi konusunda etkili değildir.

Yuan J et al. J Viral Hepat 2006;13:597

Research

Effect of hepatitis B immunisation in newborn infants of mothers positive for hepatitis B surface antigen: systematic review and meta-analysis

Chuanfang Lee, Yan Gong, Jesper Brok, Elizabeth H Boxall, Christian Gluud

Metaanaliz, 29 RCT

"Maternal viremiyi azaltmak için HBIg uygulanmasının yararı yoktur."

Lee C et al. BMJ, doi:10.1136/bmj.38719.435833.7C

SMFM Consult Series ajog.org

Society for Maternal-Fetal Medicine (SMFM) Consult Series:
#38: Hepatitis B in pregnancy screening, treatment, and prevention of vertical transmission

Society for Maternal-Fetal Medicine (SMFM); Jodie Dionne-Odom, MD; Alan T. N. Tita, MD, PhD; Neil S. Silverman, MD

HIV modelinden hareketle riskli gebelerde, güvenli olduğu bilinen antivirallerin kullanımı perinatal bulaşı azaltır mı?

Tita ATN et al. Am J Obstet Gynecol 2016;214:6

Table 3. FDA Pregnancy Categories for HBV Antiviral Therapy

HBV therapy	Pregnancy category	FDA description
	A	Adequate and well-controlled studies have failed to demonstrate a risk to the fetus in the first trimester of pregnancy (and there is no evidence of risk in later trimesters).
Telbivudine Tenofovir	B	Animal reproduction studies have failed to demonstrate a risk to the fetus, and there are no adequate and well-controlled studies in pregnant women or animal studies that have shown an adverse effect, but adequate and well-controlled studies in pregnant women have failed to demonstrate a risk to the fetus in any trimester.
Lamivudine Entecavir Adefovir	C	Animal reproduction studies have shown an adverse effect on the fetus, and there are no adequate and well-controlled studies in humans, but potential benefits might warrant use of the drug in pregnant women despite potential risks.
	D	There is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience or studies in humans, but potential benefits might warrant use of the drug in pregnant women despite potential risks.
Interferon	X	Studies in animals or humans have demonstrated fetal abnormalities, and/or there is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience, and the risks involved in use of the drug in pregnant women clearly outweigh potential benefits.

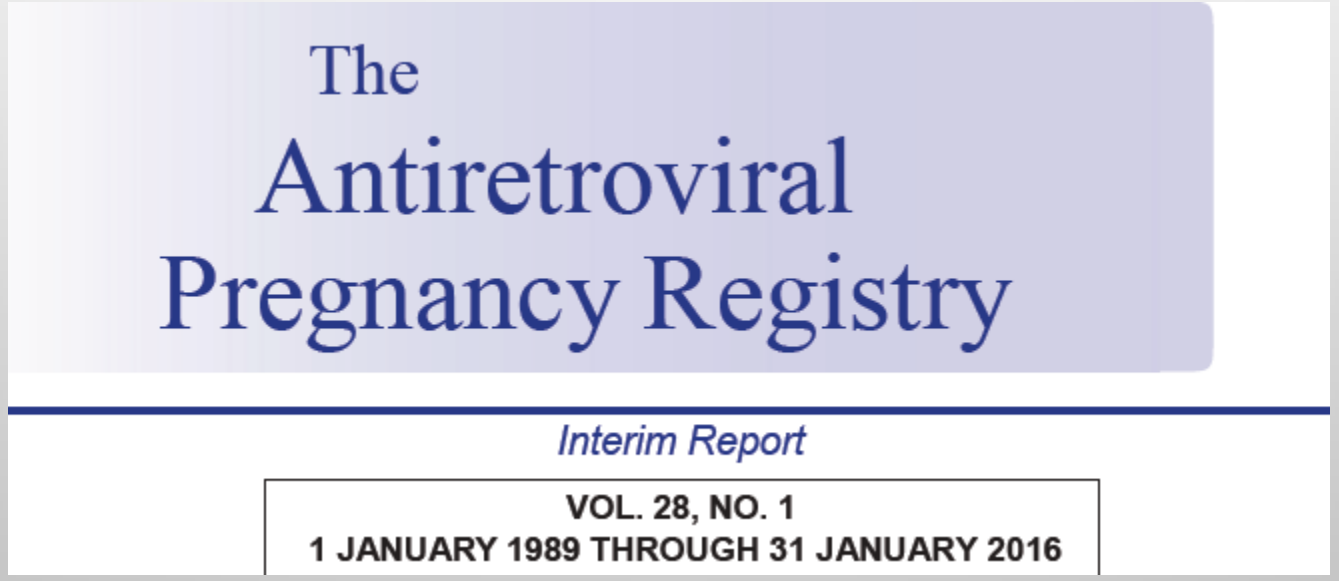
The Antiretroviral Pregnancy Registry

Interim Report

VOL. 28, NO. 1
1 JANUARY 1989 THROUGH 31 JANUARY 2016

	Earliest Trimester of Exposure			
	First Trimester		Second/Third Trimester	
	Defects/ live births	Prevalence (95% CI) [2]	Defects/ live births	Prevalence (95% CI) [2]
Proportion of defects reported with an exposure to any ART [3]	223/7925		251/9036	
Any NRTI containing regimen	216/7556		254/9065	
Any Abacavir regimen	30/1007	3.0% (2.0%, 4.2%)	33/1255	2.6% (1.8%, 3.7%)
Any Didanosine regimen	20/422	4.7% (2.9%, 7.2%)	20/462	4.3% (2.7%, 6.6%)
Any Emtricitabine regimen	48/2145	2.2% (1.6%, 3.0%)	21/1010	2.1% (1.3%, 3.2%)
Any Entecavir regimen [5]	2/58		0/3	
Any Lamivudine regimen	143/4589	3.1% (2.6%, 3.7%)	207/7281	2.8% (2.5%, 3.3%)
Any Stavudine regimen	21/810	2.6% (1.6%, 3.9%)	6/195	3.1% (1.1%, 6.6%)
Any Telbivudine regimen [5]	0/10		0/8	
Any Zalcitabine regimen	2/41		0/12	
Any Zidovudine regimen	133/4128	3.2% (2.7%, 3.8%)	265/9401	2.8% (2.5%, 3.2%)

http://www.apregistry.com/forms/interim_report.pdf



"Antiviral Pregnancy Registry" LAM ile doğumsal defekt sıklığı antiviral kullanılmayan gebeliklerden farklı değil

1. trimesterda %3,1
2/3. trimesterda %2,8

http://www.apregistry.com/forms/interim_report.pdf

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Lamivudine treatment during pregnancy to prevent perinatal transmission of hepatitis B virus infection

M. van Zonneveld, A. B. van Nunen, H. G. M. Niesters, R. A. de Man, S. W. Schalm, H. L. A. Janssen

First published: 23 June 2003 Full publication history

View issue TOC
Volume 10, Issue 4
July 2003
Pages 294–297

8 gebe, gebeliğin son ayında 150 mg LAM/gün
24 gebe tarihi kontrol

Tüm gebelerde yüksek viral yük $1,2x10^9$ geq/ml
Tüm bebeklere pasif/aktif immünizasyon

van Zonneveld M et al. J Viral Hepat 2003;10:294

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Lamivudine treatment during pregnancy to prevent perinatal transmission of hepatitis B virus infection

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First published: 23 June 2003 Full publication history

View issue TOC
Volume 10, Issue 4
July 2003
Pages 294–297

Bebeklerde 12. ayda HBsAg pozitifliği

LAM grubu %12,5

Kontrol grubu %28

van Zonneveld M et al. J Viral Hepat 2003;10:294

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Lamivudine treatment during pregnancy to prevent perinatal transmission of hepatitis B virus infection

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First published: 23 June 2003 Full publication history

View issue TOC
Volume 10, Issue 4
July 2003
Pages 294–297

Yüksek viremisi olan HBsAg pozitif annelerde gebeliğin son ayında LAM ile vireminin düşürülmesi perinatal bulaşı önlemede etkindir.

van Zonneveld M et al. J Viral Hepat 2003;10:294

Journal of Viral Hepatitis, 2009, **16**, 94–103 doi:10.1111/j.1365-2893.2008.01056.x

Lamivudine in late pregnancy to prevent perinatal transmission of hepatitis B virus infection: a multicentre, randomized, double-blind, placebo-controlled study

W.-M. Xu,[1] Y.-T. Cui,[2] L. Wang,[3] H. Yang,[4] Z.-Q. Liang,[5] X.-M. Li,[6] S.-L. Zhang,[7] F.-Y. Qiao,[8] F. Campbell,[9] C.-N. Chang,[10] S. Gardner[10] and M. Atkins[11] [1]*Shanghai Infectious Disease Hospital, Shanghai, China;* [2]*Beijing United Family Hospital, Beijing, China;* [3]*Beijing Ditan Hospital, Beijing, China;* [4]*Beijing Youan Hospital, Beijing, China;* [5]*Southwestern Hospital, Chongqing, China;* [6]*The 3rd Affiliated Hospital of Zhongshan University, Guangzhou, China;* [7]*The 1st Affiliated Hospital of Xian Communication University, Xian, China;* [8]*Wuhan Tongji Hospital, Wuhan, China;* [9]*GlaxoSmithKline Research and Development, Greenford, UK;* [10]*GlaxoSmithKline Research and Development, Research Triangle Park, NC, USA; and* [11]*St. Mary's Hospital, London, UK*

Randomize, plasebo kontrollü çalışma
HBeAg pozitif, HBV DNA >9 log kopya/ml gebelerde
32. hafta-postpartum 4. hafta arası LAM 100 mg/gün

Xu WM et al. J Viral Hepat 2009;16:94

Journal of Viral Hepatitis, 2009, **16**, 94–103 doi:10.1111/j.1365-2893.2008.01056.x

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52. haftada HBsAg pozitifliği (ITT)

- LAM/HBIg/Aşı 10/56 (%18)
- Plasebo/HBIg/Aşı 23/59 (%39)

p=0,014

Xu WM et al. J Viral Hepat 2009;16:94

Reviews

Lamivudine in Late Pregnancy to Interrupt In Utero Transmission of Hepatitis B Virus

A Systematic Review and Meta-Analysis

Zhongjie Shi, MD, Yuebo Yang, MD, Lin Ma, MD, Xiaomao Li, MD, and Ann Schreiber, BSN

Metaanaliz

10 RCT,

951 HBsAg (+) gebe

Shi Z et al. Obstetrics Gynecol 2010;116:147

Lamivudine in Late Pregnancy to Interrupt In Utero Transmission of Hepatitis B Virus

A Systematic Review and Meta-Analysis

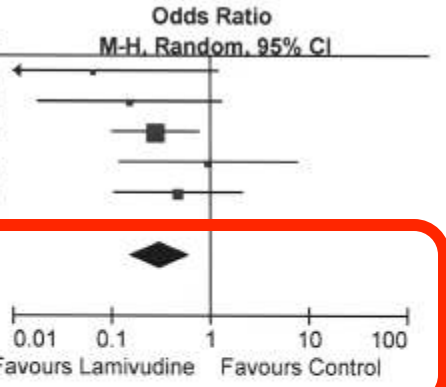
Zhongjie Shi, MD, Yuebo Yang, MD, Lin Ma, MD, Xiaomao Li, MD, and Ann Schreiber, BSN

A **Infant HBsAg seropositivity at age 9–12 months**

Study or Subgroup	Lamivudine Events	Lamivudine Total	Control Events	Control Total	Weight	Odds Ratio M-H, Random, 95% CI	Year
Han 2005	0	43	5	35	5.9%	0.06 [0.00, 1.20]	2005
Li 2006	1	36	7	44	10.9%	0.15 [0.02, 1.29]	2006
Feng 2007	7	48	16	42	48.9%	0.28 [0.10, 0.77]	2007
Yang' 2008	2	20	2	19	11.8%	0.94 [0.12, 7.48]	2008
Xu 2009	3	49	5	41	22.5%	0.47 [0.11, 2.10]	2009
Total (95% CI)		**196**		**181**	**100.0%**	**0.31 [0.15, 0.63]**	
Total events	13		35				

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 3.07$, df = 4 (P = 0.55); $I^2 = 0\%$

Test for overall effect: Z = 3.24 (P = 0.001)

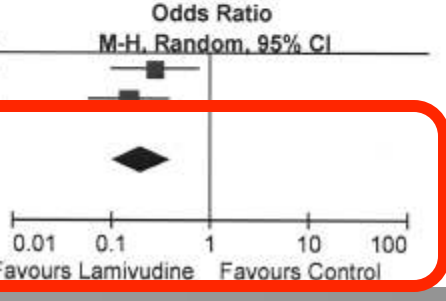


B **Infant HBV DNA seropositivity at age 9–12 months**

Study or Subgroup	Lamivudine Events	Lamivudine Total	Control Events	Control Total	Weight	Odds Ratio M-H, Random, 95% CI	Year
Feng 2007	7	48	16	42	45.7%	0.28 [0.10, 0.77]	2007
Xu 2009	11	49	27	41	54.3%		
Total (95% CI)		**97**		**83**	**100.0%**	**0.20 [0.10, 0.39]**	
Total events	18		43				

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 0.76$, df = 1 (P = 0.38); $I^2 = 0\%$

Test for overall effect: Z = 4.62 (P < 0.00001)



Reviews

Lamivudine in Late Pregnancy to Interrupt In Utero Transmission of Hepatitis B Virus

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Gebeliğin 24-28. haftalarında başlanarak postpartum 4. haftaya kadar devam eden LAM ile perinatal bulaş %80 oranında azaltılmaktadır (OR 0,2, p<0,001)

Shi Z et al. Obstetrics Gynecol 2010;116:147

Reviews

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Yüksek viremisi olan gebelerde gebeliğin son döneminde LAM kullanımı belirgin bir yan etki ya da komplikasyon olmaksızın, perinatal bulaşı etkin biçimde önlemektedir.

LAM kullanımı ile birinci yıl sonunda yüksek oranda direnç gelişmesi (%32), doğum sonrası tedaviye devam etmesi gereken hastalarda bir sorundur.

Shi Z et al. Obstetrics Gynecol 2010;116:147

LAM 2. trimester? / 3. trimester?

LAM 2. trimester (n=119)

LAM 3. trimester (n=45)

Kontrol (n=92)

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Lamivudine Use in the 2nd or 3rd Trimester of Pregnancy has Similar Efficacy in Preventing Vertical Transmission (VT) of Chronic Hepatitis B (CHB) in Highly Viremic Mothers

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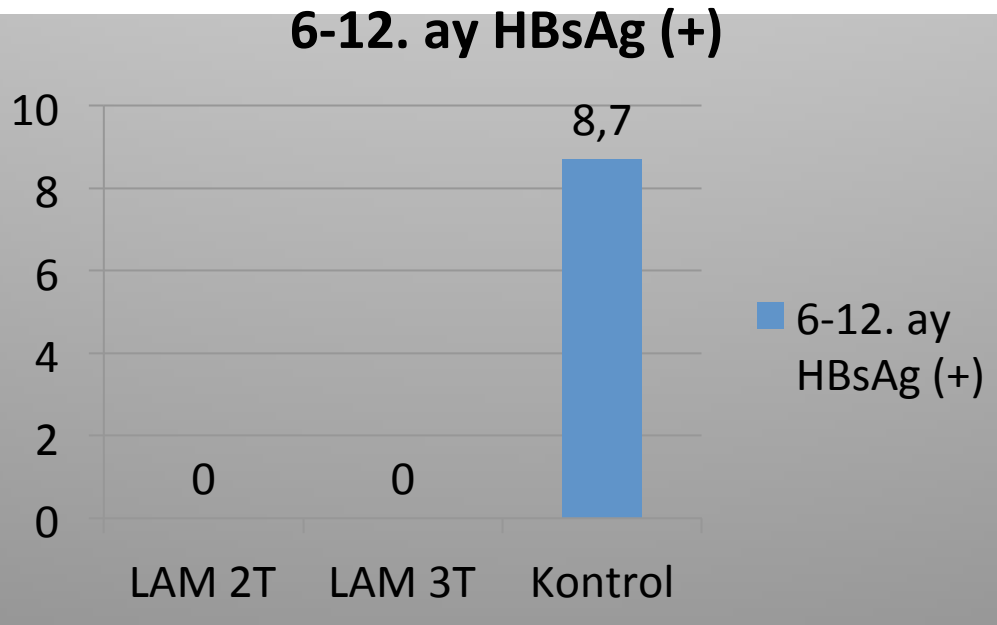

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AASLD LiverLearning®. Pan C. Nov 4, 2011; 15712
Topic: Treatment and Clinical Trials

LAM 2 ya da 3. trimesterda başlandığında benzer etkinlik göstermekte ve perinatal bulaşı azaltmaktadır.

Fetal teması ve direnç gelişme riskini azaltmak için üçüncü trimestera kadar beklenebilir.

Research Article

EASL EUROPEAN ASSOCIATION FOR THE STUDY OF THE LIVER | JOURNAL OF HEPATOLOGY

A prospective and open-label study for the efficacy and safety of telbivudine in pregnancy for the prevention of perinatal transmission of hepatitis B virus infection

Guo-Rong Han[1,*], Min-Kai Cao[2], Wei Zhao[3], Hong-Xiu Jiang[1], Cui-Min Wang[1], Shu-Fen Bai[1], Xin Yue[1], Gen-Ju Wang[1], Xun Tang[1], Zhi-Xun Fang[3]

[1]Department of Gynecology and Obstetrics, The Second Affiliated Hospital of the Southeast University, Nanjing, China; [2]Department of Gynecology and Obstetrics, School of Medicine, Southeast University, Nanjing, China; [3]Department of Infectious Diseases, The Second Affiliated Hospital of the Southeast University, Nanjing, China

229 HBeAg (+), HBV DNA >10^7 kopya/ml

20-32. hf arası LdT 600 mg/gün (n=135)

Kontrol (n=94)

Tüm yenidoğanlara 200 IUHBIg, 12 saat içinde ve HBV aşısı 0, 1, 6. aylarda

Bebeklerde 28. haftada HBsAg ve HBV DNA

Han GR et al. J Hepatol 2011;55:1215

Research Article

EASL EUROPEAN ASSOCIATION FOR THE STUDY OF THE LIVER | JOURNAL OF HEPATOLOGY

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[1]Department (Gynecology and C

epartment of Second Affiliated

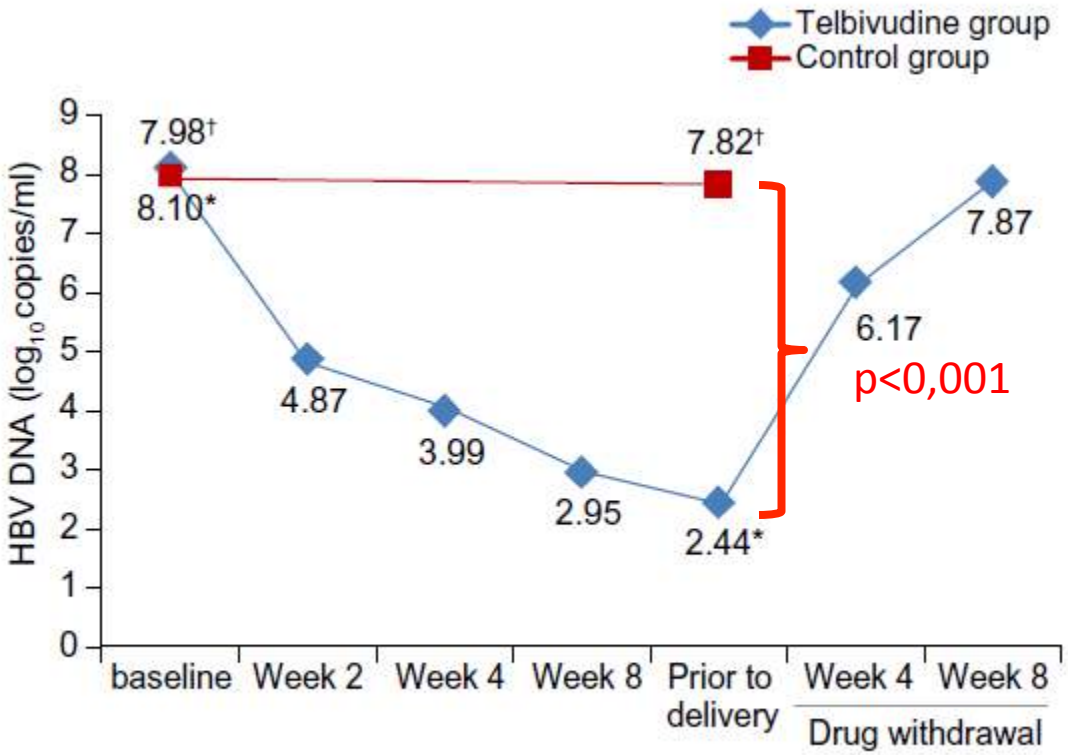

Fig. 2. HBV kinetics in patients treated and not treated with telbivudine.

l. J Hepatol 2011;55:1215

Research Article

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[1]Department of Gynecology and Obstetrics, The Second Affiliated Hospital of the Southeast University, Nanjing, China; [2]Department of Gynecology and Obstetrics, School of Medicine, Southeast University, Nanjing, China; [3]Department of Infectious Diseases, The Second Affiliated Hospital of the Southeast University, Nanjing, China

Bebeklerde 28. haftada HBsAg pozitifliği

LdT 0/132 (%0)

Kontrol 7/88 (%8)

p<0,001

Han GR et al. J Hepatol 2011;55:1215

Research Article

EASL EUROPEAN ASSOCIATION FOR THE STUDY OF THE LIVER | JOURNAL OF HEPATOLOGY

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LdT HBeAg pozitif gebelerde perinatal HBV bulaşını etkin biçimde azaltmaktadır.

LdT gebeler ve infantlarda güvenlidir.

Han GR et al. J Hepatol 2011;55:1215

Clinical Gastroenterology and Hepatology 2015;13:1170–1176

Telbivudine Prevents Vertical Transmission of Hepatitis B Virus From Women With High Viral Loads: A Prospective Long-Term Study

Quanxin Wu,[*,‡,a] Hongfei Huang,[*,‡,a] Xiaowen Sun,[*,‡] Meimin Pan,[§] Yun He,[‖] Shun Tan,[*,‡] Yi Zeng,[¶] Li Li,[#] Guohong Deng,[*,‡] Zehui Yan,[*,‡] Dengming He,[*,**] Junnan Li,[#] and Yuming Wang[*,‡]

450 HBeAg (+), HBV DNA >10^6 kopya/ml

24-32. hf arası LdT 600 mg/gün (n=279)

Kontrol (n=171)

Tüm yenidoğanlara 200 IUHBIg, 12 saat içinde ve HBV aşısı 0, 1, 6. aylarda

Bebeklerde 6. ayda HBsAg ve HBV DNA

Wu Q et al. Clin Gastroenterol Hepatol 2015;13:1170

Clinical Gastroenterology and Hepatology 2015;13:1170–1176

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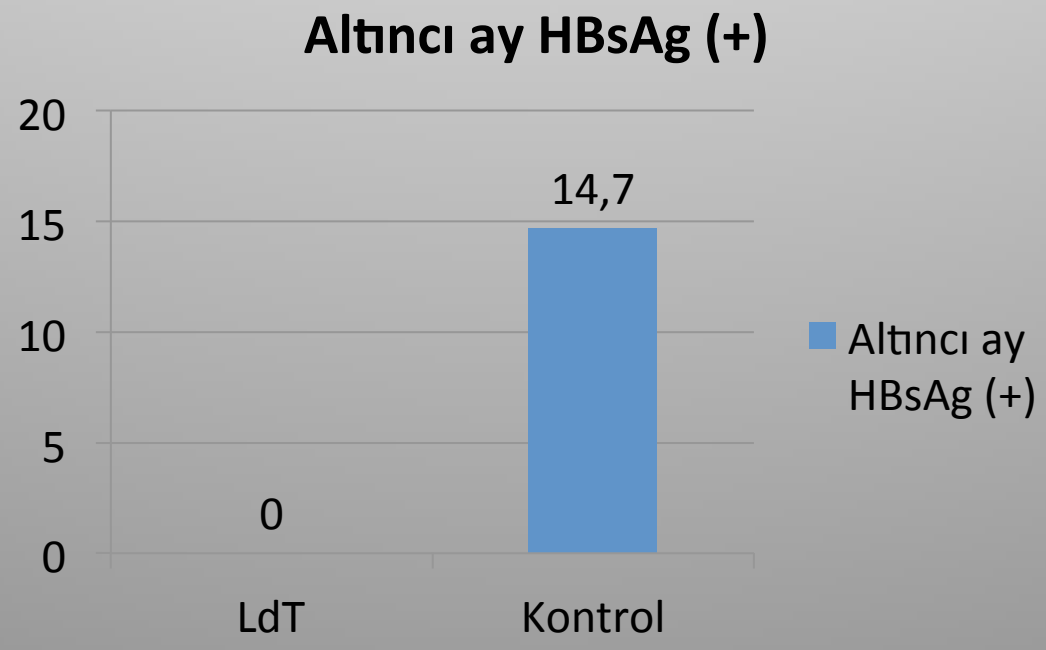

Wu Q et al. Clin Gastroenterol Hepatol 2015;13:1170

Deng *et al. Virology Journal* 2012, **9**:185
http://www.virologyj.com/content/9/1/185

VIROLOGY JOURNAL

REVIEW **Open Access**

The effects of telbivudine in late pregnancy to prevent intrauterine transmission of the hepatitis B virus: a systematic review and meta-analysis

Min Deng[1], Xin Zhou[1], Sheng Gao[2], Shi-Gui Yang[1], Bing Wang[1], Hua-Zhong Chen[3] and Bing Ruan[1*]

Metaanaliz

2 RCT, 4 NRCT, toplam 576 gebe,

LdT (n=306)

Kontrol (n=270)

Deng M et al. Virology J 2012;9:185

Deng *et al. Virology Journal* 2012, **9**:185
http://www.virologyj.com/content/9/1/185

VIROLOGY JOURNAL

REVIEW Open Access

The effects of telbivudine in late pregnancy to prevent intrauterine transmission of the hepatitis B virus: a systematic review and meta-analysis

LdT kullanan grupta

Doğum öncesi maternal HBV DNA düzeyleri daha düşük

Yenidoğanlarda 6-12. ayda HBsAg ve HBV DNA pozitifliği daha düşük,

Gebeliğin geç döneminde LdT kullanımı, belirgin yan etki ya da komplikasyon olmaksızın perinatal bulaşı önlemektedir.

Deng M et al. Virology J 2012;9:185

HEPATOLOGY
Official Journal of the American Association for the Study of Liver Diseases

Efficacy of Maternal Tenofovir Disoproxil Fumarate in Interrupting Mother-to-Infant Transmission of Hepatitis B Virus

Huey-Ling Chen,[1,2,3] Chien-Nan Lee,[4] Chin-Hao Chang,[5] Yen-Hsuan Ni,[1] Ming-Kwang Shyu,[3] Shih-Ming Chen,[7] Jen-Jan Hu,[8] Hans Hsienhong Lin,[9] Lu-Lu Zhao,[10] Shu-Chi Mu,[11] Ming-Wei Lai,[12] Chyi-Long Lee,[13] Hsien-Ming Lin,[14] Ming-Song Tsai,[15] Jenn-Jeih Hsu,[16] Ding-Shinn Chen,[3,6,17] K. Arnold Chan,[5] and Mei-Hwei Chang,[1,3]
Taiwan Study Group for the Prevention of Mother-to-Infant Transmission of HBV (PreMIT Study)

Prospektif, çok merkezli çalışma

118 HBsAg (+), HBeAg (+), HBV DNA >7,5 log IU/ml gebe

TDF (n=62)

Kontrol (n=56)

Chen HL et al. Hepatology 2015;62:375

HEPATOLOGY
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Taiwan Study Group for the Prevention of Mother-to-Infant Transmission of HBV (PreMIT Study)

30-32. haftadan postpartum 1. ay sonuna kadar
6. ayda bebekte HBsAg pozitifliği

Chen HL et al. Hepatology 2015;62:375

HEPATOLOGY
Official Journal of the American Association for the Study of Liver Diseases

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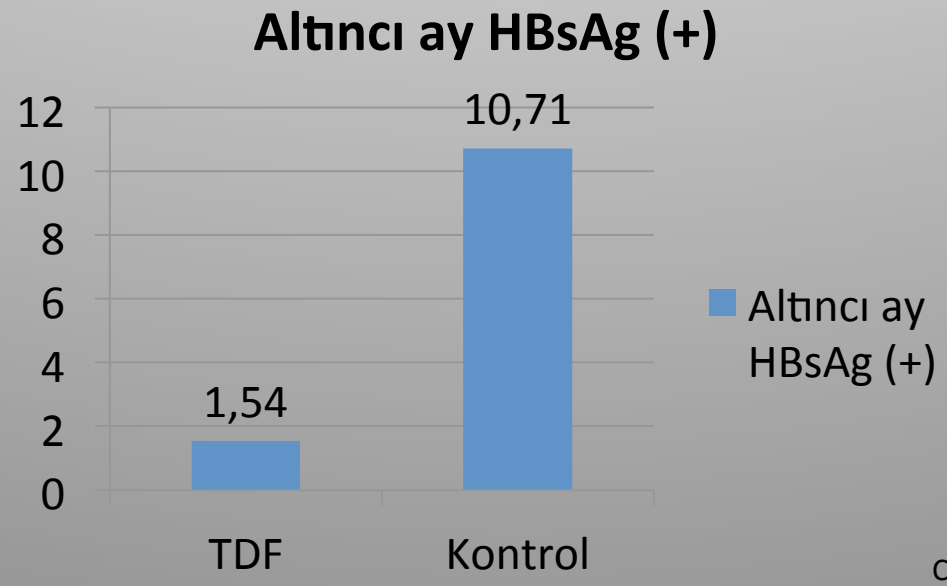

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Taiwan Study Group for the Prevention of Mother-to-Infant Transmission of HBV (PreMIT Study)

Yüksek viremisi olan gebelerde TDF tedavisi ile HBV DNA düzeyleri hızlı ve etkin biçimde düşmüş, bebeklerde altıncı ayda HBsAg pozitifliği azalmıştır.

Tedavi iyi tolere edilmiştir.

Chen HL et al. Hepatology 2015;62:375

Research Article

EASL EUROPEAN ASSOCIATION FOR THE STUDY OF THE LIVER | JOURNAL OF HEPATOLOGY

Efficacy and safety of tenofovir disoproxil fumarate in pregnancy to prevent perinatal transmission of hepatitis B virus

Astrid-Jane Greenup[1], Pok Kern Tan[1], Vi Nguyen[1], Anne Glass[1], Scott Davison[1], Ushmi Chatterjee[2], Susan Holdaway[3], Dev Samarasinghe[3], Kathy Jackson[4], Stephen A. Locarnini[4], Miriam T. Levy[1,2,*]

[1]*Gastroenterology, Liverpool Hospital, Sydney, Australia;* [2]*University of New South Wales, Sydney, Australia;*
[3]*Storr Liver Unit, Westmead Millennium Institute and Westmead Hospital, University of Sydney, Westmead, NSW 2145, Australia;*
[4]*Victorian Infectious Diseases Reference Laboratory, Melbourne, VIC, Australia*

TDF kullanılan en geniş prospektif çalışma

Greenup AJ et al. J Hepatol 2014;61:502

Research Article

EASL EUROPEAN ASSOCIATION FOR THE STUDY OF THE LIVER | JOURNAL OF HEPATOLOGY

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[3]*Storr Liver Unit, Westmead Millennium Institute and Westmead Hospital, University of Sydney, Westmead, NSW 2145, Australia;*
[4]*Victorian Infectious Diseases Reference Laboratory, Melbourne, VIC, Australia*

Prospektif, çok merkezli çalışma

120 HBsAg (+), HBV DNA >7 log IU/ml gebe,

130 gebelik, %96 HBeAg (+),

LAM (n=52) 2007-2010

TDF (n=58) 2010-

Kontrol (n=20)

Greenup AJ et al. J Hepatol 2014;61:502

Research Article

EASL EUROPEAN ASSOCIATION FOR THE STUDY OF THE LIVER | JOURNAL OF HEPATOLOGY

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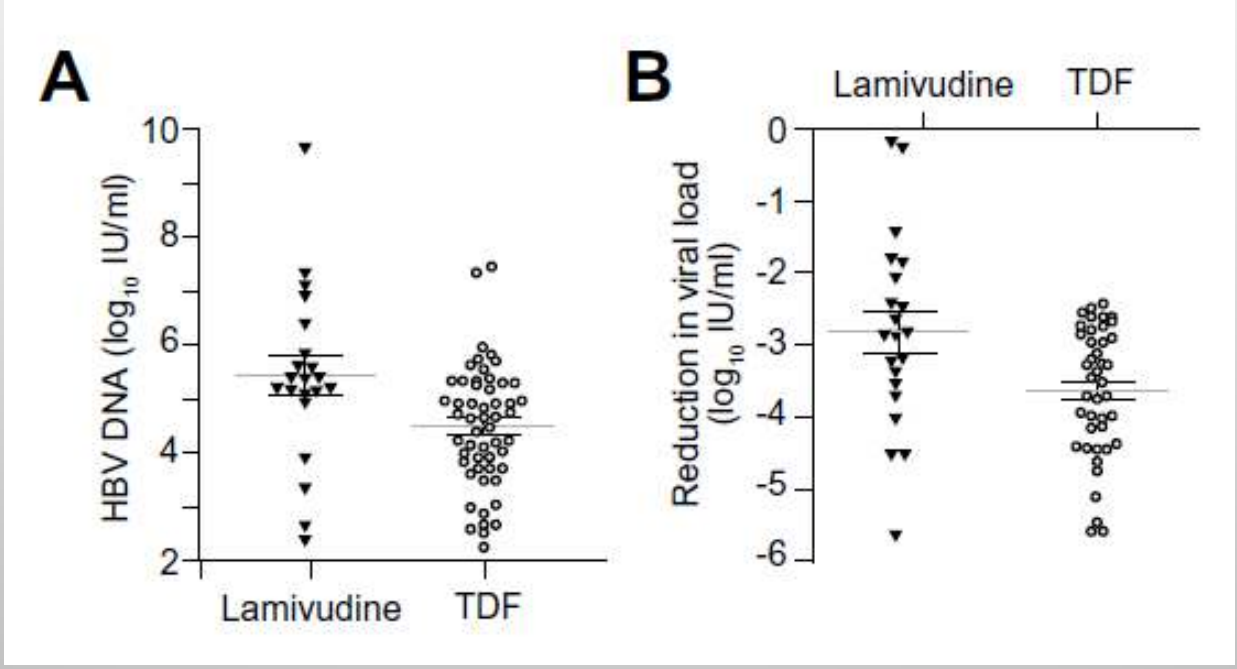
[4]*Victorian Infectious Diseases Reference Laboratory, Melbourne, VIC, Australia*

32. haftadan postpartum 4-12. hafta sonuna kadar
9. ayda bebekte HBsAg pozitifliği

Greenup AJ et al. J Hepatol 2014;61:502



LAM ve TDF alan hastalarda doğum sırasında viral yük ve viral yükteki ortalama azalma

LAM 2,81±1,33 IU/ml

TDF 3,64±0,9 IU/ml

p=0,01

Greenup AJ et al. J Hepatol 2014;61:502

Research Article

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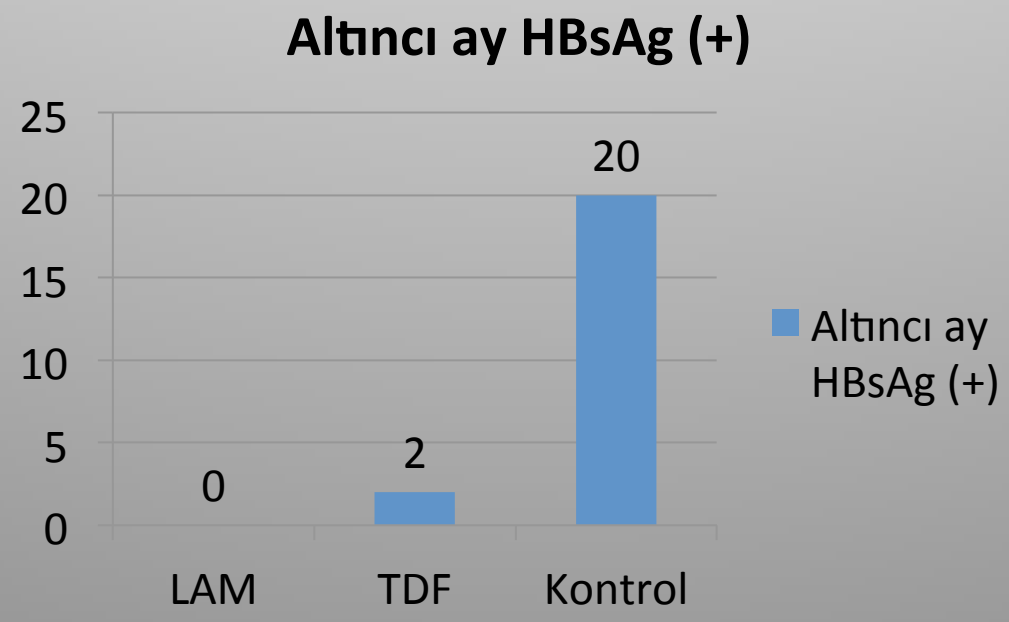
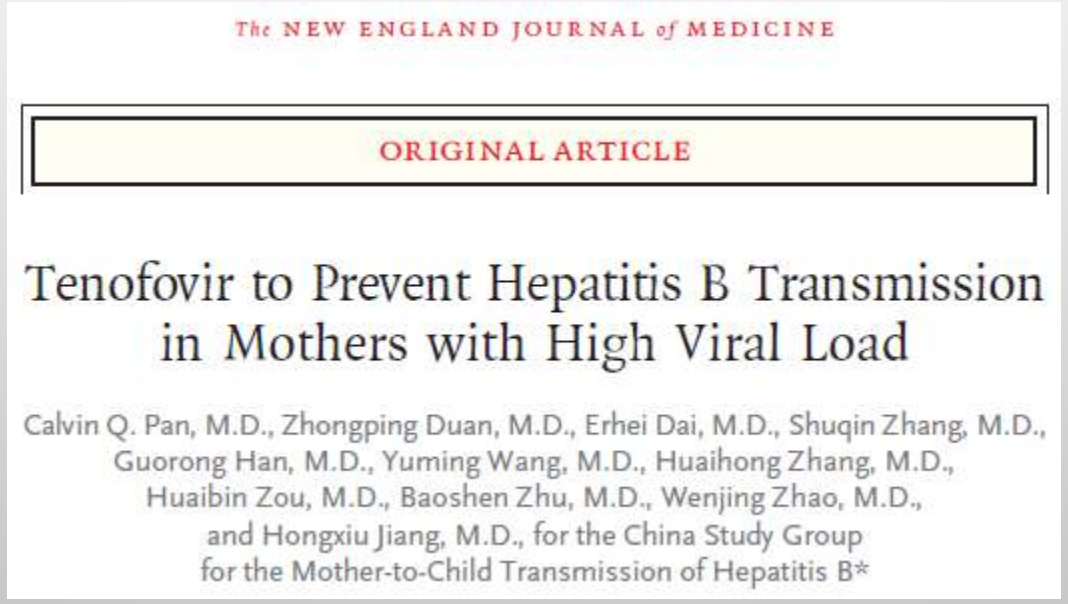


Greenup AJ et al. J Hepatol 2014;61:502



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Tenofovir to Prevent Hepatitis B Transmission in Mothers with High Viral Load

Calvin Q. Pan, M.D., Zhongping Duan, M.D., Erhei Dai, M.D., Shuqin Zhang, M.D., Guorong Han, M.D., Yuming Wang, M.D., Huaihong Zhang, M.D., Huaibin Zou, M.D., Baoshen Zhu, M.D., Wenjing Zhao, M.D., and Hongxiu Jiang, M.D., for the China Study Group for the Mother-to-Child Transmission of Hepatitis B*

Randomize, çok merkezli çalışma

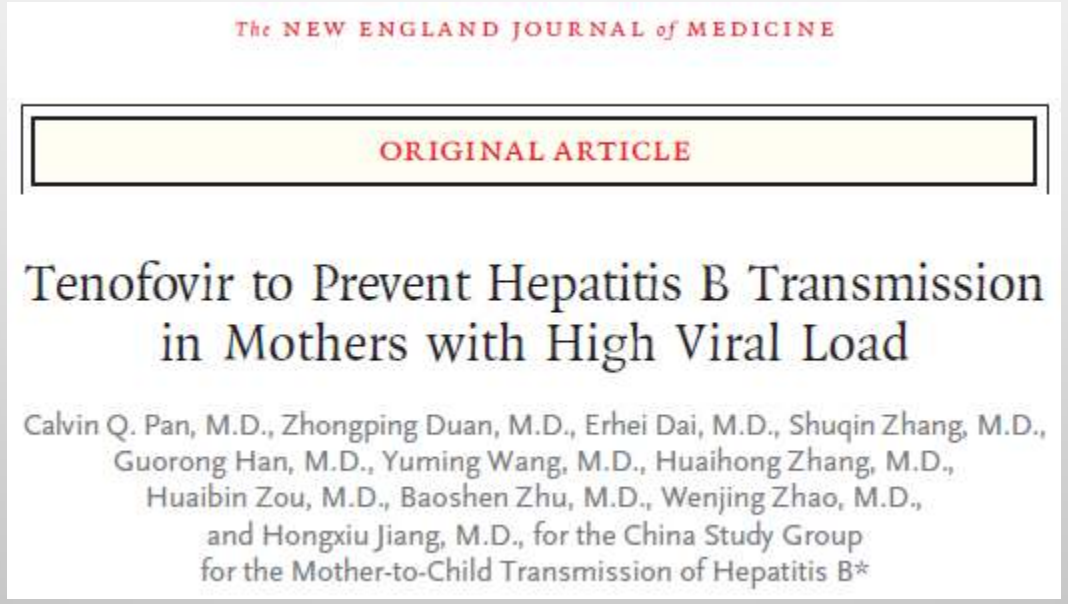
200 HBsAg (+), HBeAg (+), HBV DNA >200000 IU/ml gebe,

TDF (n=100)

Kontrol (n=100)

30-32. haftadan postpartum 4. hafta sonuna kadar 28. haftada bebekte HBsAg pozitifliği

Pan CQ et al. N Engl J Med 2016;374:2324



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Doğum sırasında median HBV DNA düzeyi

TDF grubu 4,7 log IU/ml **p<0,001**

Kontrol grubu 8,0 log IU/ml

Doğum sırasında HBV DNA <200000 IU/ml

TDF grubu %68 **p<0,001**

Kontrol grubu %2

Pan CQ et al. N Engl J Med 2016;374:2324

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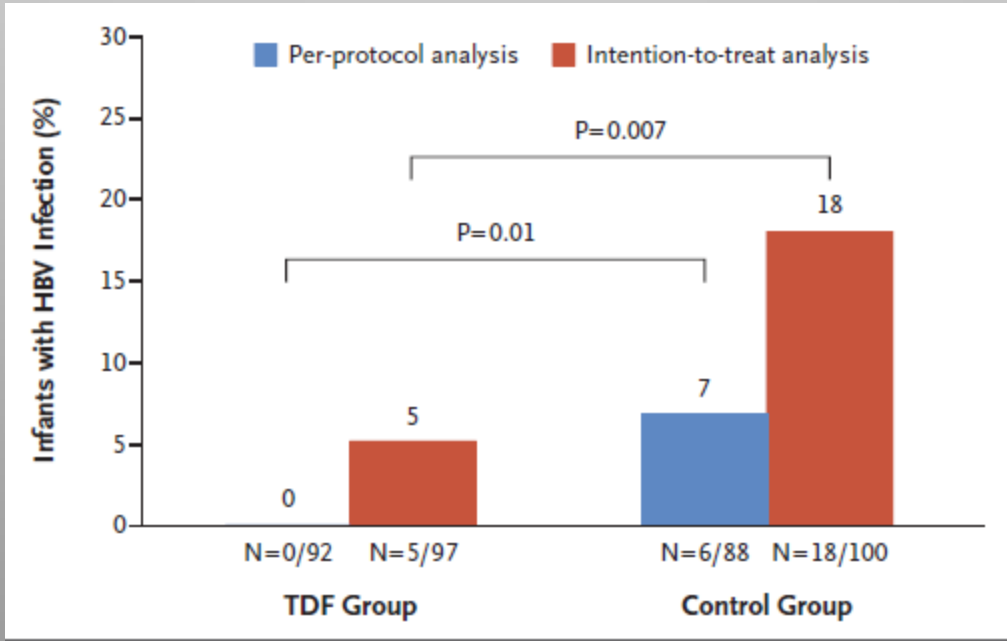
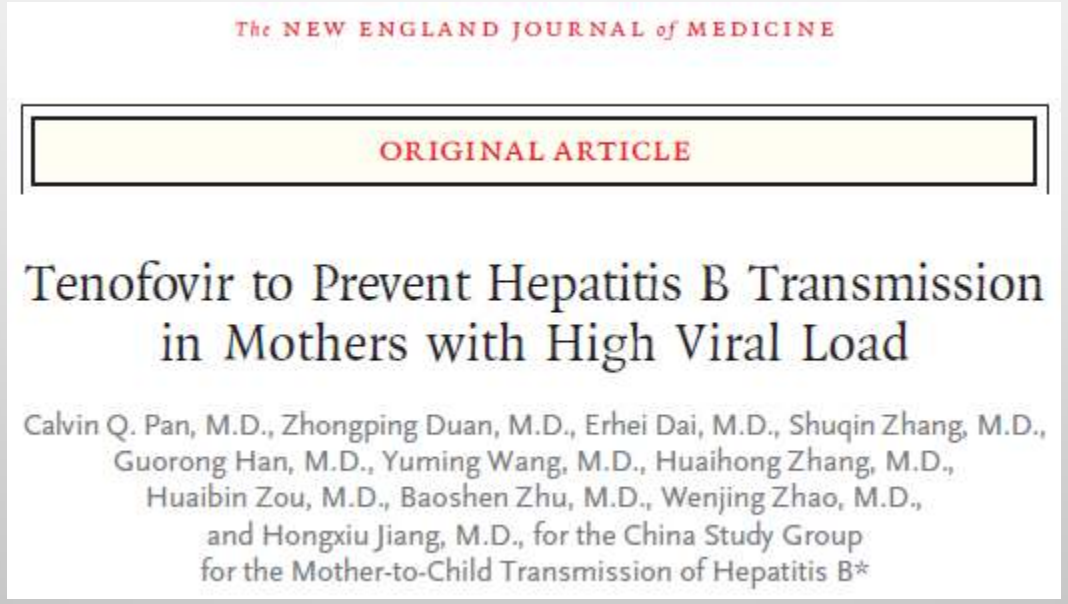


Figure 2. Rate of Hepatitis B Virus (HBV) Infection among Infants.

Pan CQ et al. N Engl J Med 2016;374:2324



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TDF alan gebelerin %68'inde doğumda hedef HBV DNA düzeyi elde edilmiştir (<200000 IU/ml)

Hem ITT hem de PP analizde TDF etkinliği gösterilmiştir.

Anne ve yenidoğan açısından TDF güvenlidir.

Pan CQ et al. N Engl J Med 2016;374:2324

HEPATOLOGY
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Antiviral Therapy in Chronic Hepatitis B Viral Infection During Pregnancy: A Systematic Review and Meta-Analysis

Robert S. Brown, Jr.,[1] Brian J. McMahon,[2] Anna S.F. Lok,[3] John B. Wong,[4] Ahmed T. Ahmed,[5,6] Mohamed A. Mouchli,[7] Zhen Wang,[5,6] Larry J. Prokop,[8] Mohammad Hassan Murad,[5,6,9] and Khaled Mohammed[5,6,9]

AASLD metaanalizi

26 kontrollü çalışma, 3622 gebe

11 LAM-kontrol

9 LdT-kontrol

2 LAM-LdT

3 TDF-kontrol

1 TDF-LAM

Brown RS et al. Hepatology 2016;63:319

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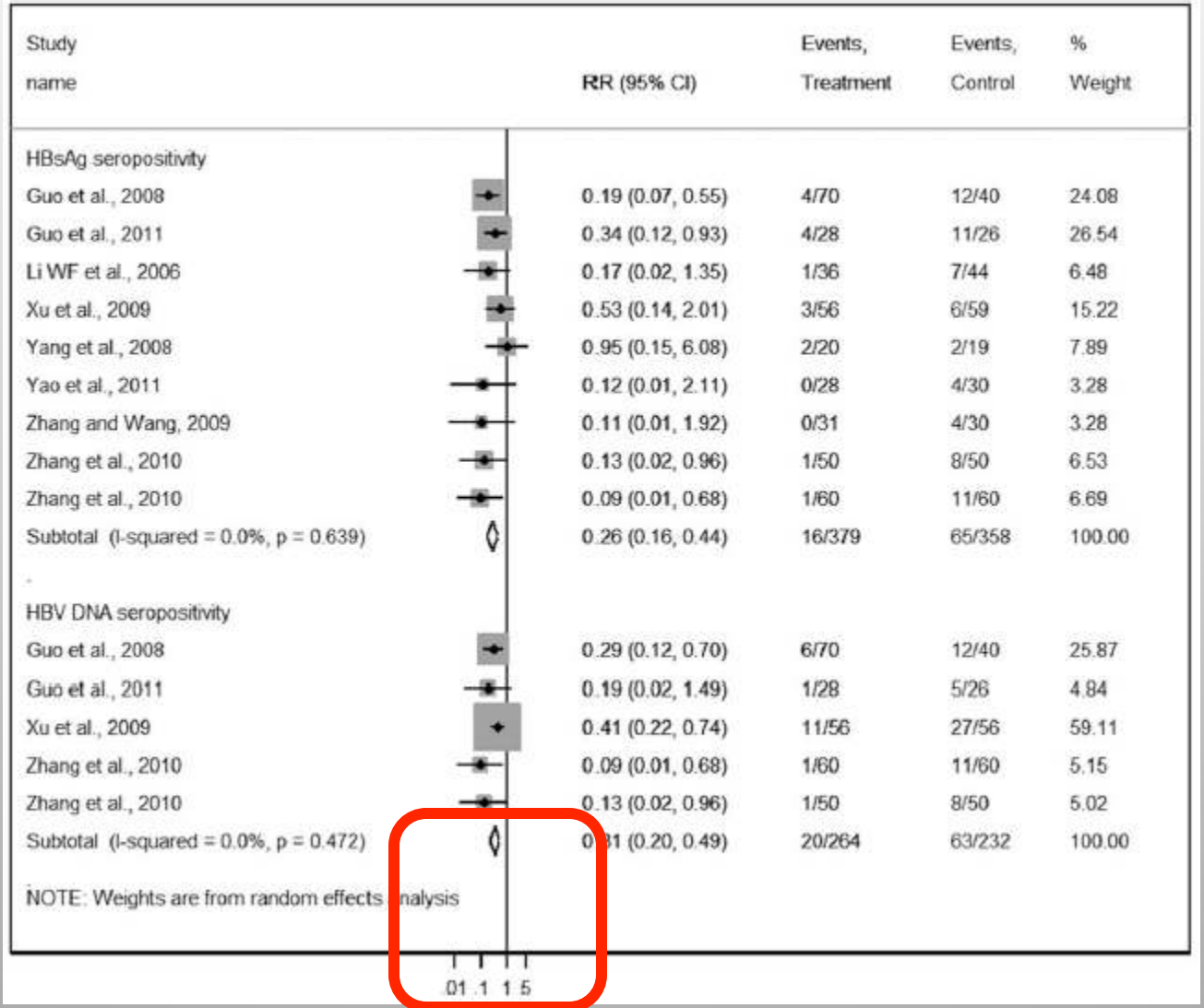
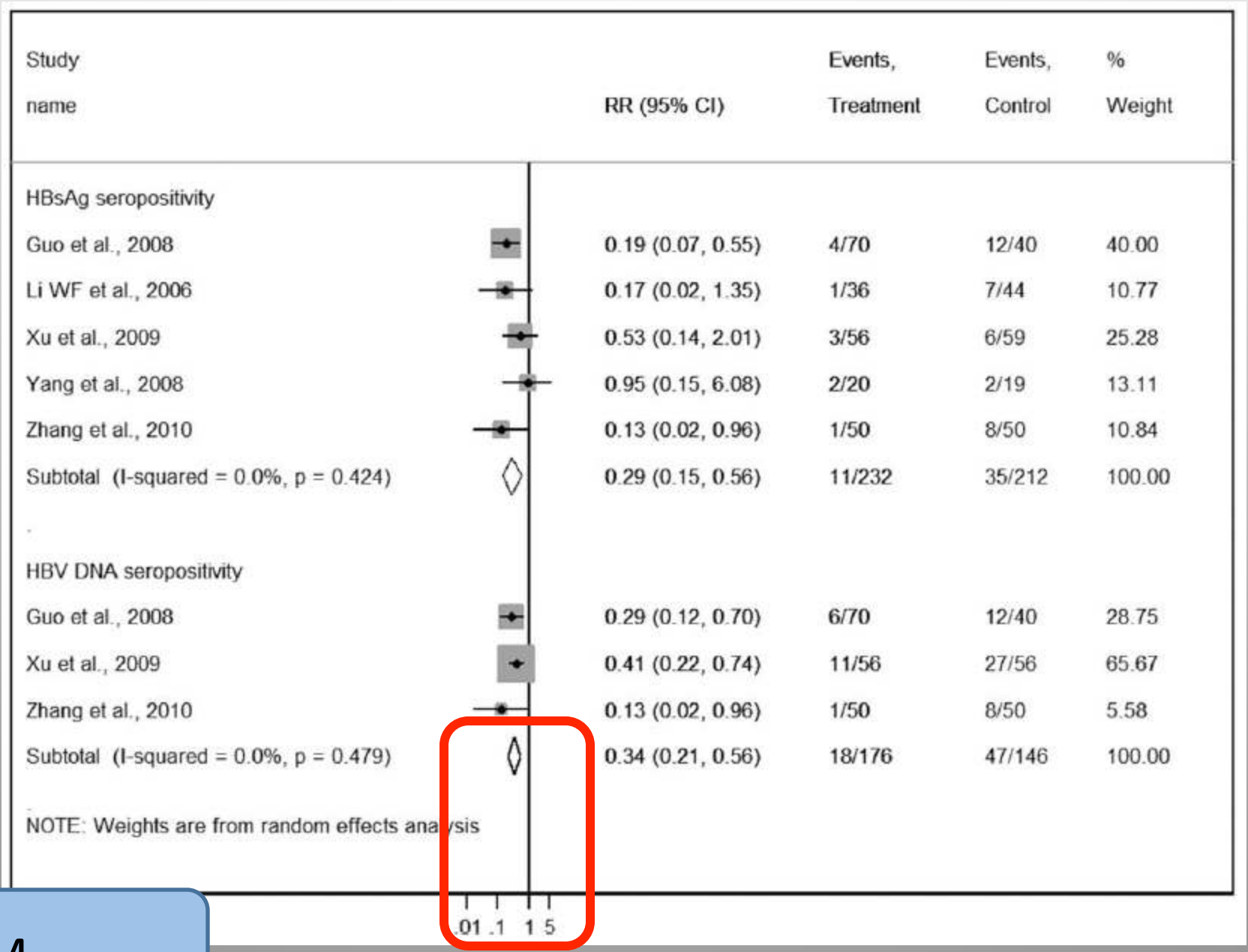
Perinatal bulaşta azalma ile anne ve bebekte yan etkiler

Brown RS et al. Hepatology 2016;63:319



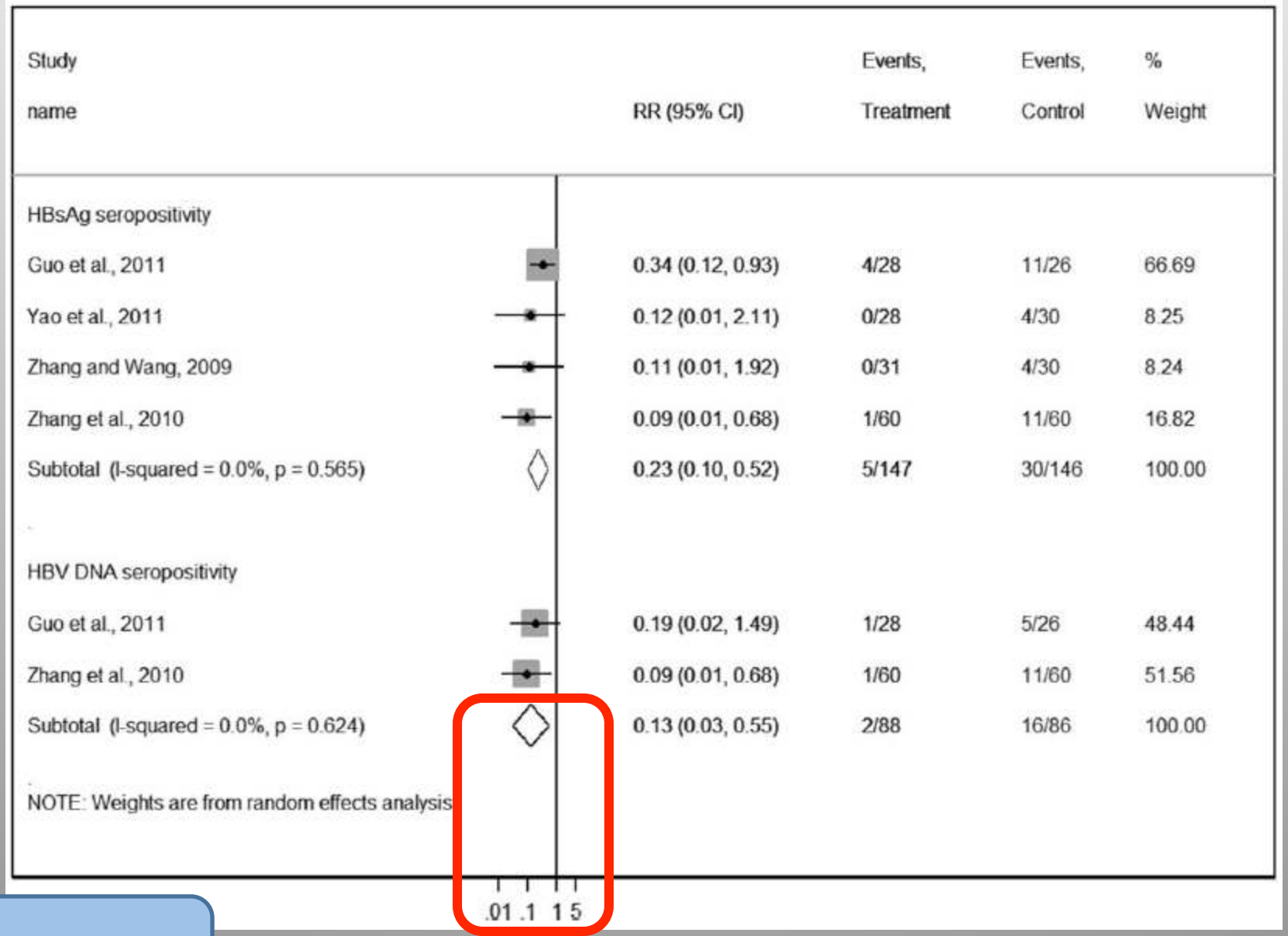
Herhangi bir antiviral tedavi, 6-12. ayda infant HBsAg ve HBV DNA pozitifliği

Brown RS et al. Hepatology 2016;63:319



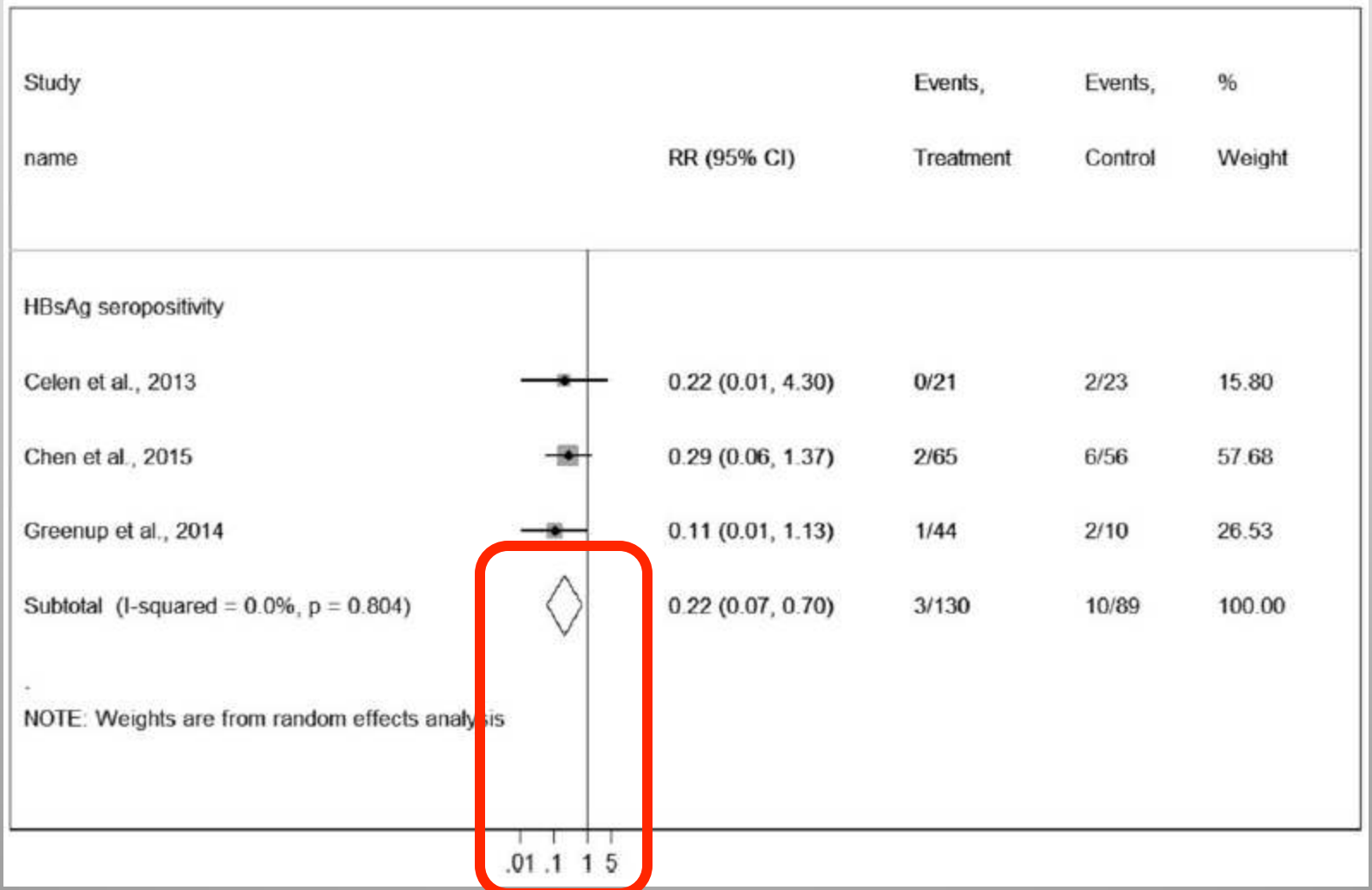
LAM

Brown RS et al. Hepatology 2016;63:319



LdT

Brown RS et al. Hepatology 2016;63:319



TDF

Brown RS et al. Hepatology 2016;63:319

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6-12. ayda bebekte HBsAg pozitifliği açısından LAM, LdT, TDF arasında fark yok.

LAM, LdT, TDF kontrole göre doğum sırasında belirgin HBV DNA baskılanması sağlarlar.

LdT>LAM, başka veri yok

Brown RS et al. Hepatology 2016;63:319

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Konjenital malformasyon, prematürite, APGAR skorları açısından antiviral tedavi alanlarla almayanlar arasında fark yok.

Maternal sonuçlar açısından tedavi alanlar ve almayanlar arasında fark yok

Brown RS et al. Hepatology 2016;63:319

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Gebelerde LAM, LdT, TDF kullanımı 6-12. ayda bebekte HBsAg ve HBV DNA pozitifliğini %70'in üzerinde azaltmaktadır,

HBeAg (+) ve HBV DNA >200000 IU/ml gebelerde perinatal bulaşın önlenmesi için 3. trimesterda antiviral tedavi önerilir.

Brown RS et al. Hepatology 2016;63:319

CLINICAL GASTROENTEROLOGY AND HEPATOLOGY 2013;11:1349–1355

Cesarean Section Reduces Perinatal Transmission of Hepatitis B Virus Infection From Hepatitis B Surface Antigen–Positive Women to Their Infants

CALVIN Q. PAN,* HUAI-BIN ZOU,‡ YU CHEN,‡ XIAOHUI ZHANG,‡ HUA ZHANG,§ JIE LI,‖ and ZHONGPING DUAN‡

*Division of Liver Diseases, Department of Medicine, Mount Sinai Medical Center, Mount Sinai School of Medicine, New York, New York; ‡Artificial Liver Center, Beijing Youan Hospital, Capital Medical University, Beijing, China; §Department of Obstetrics and Gynecology, Beijing Youan Hospital, Capital Medical University, Beijing, China; and ‖Department of Microbiology, Peking University Science Health Centre, Beijing, China

HBsAg (+) annelerden doğan 1409 bebek

Vajinal doğum (n=673)

Elektif sezaryen (n=496)

Acil sezaryen (n=240)

Pan CQ et al. Clin Gastroenterol Hepatol 2013;11:1349

CLINICAL GASTROENTEROLOGY AND HEPATOLOGY 2013;11:1349–1355

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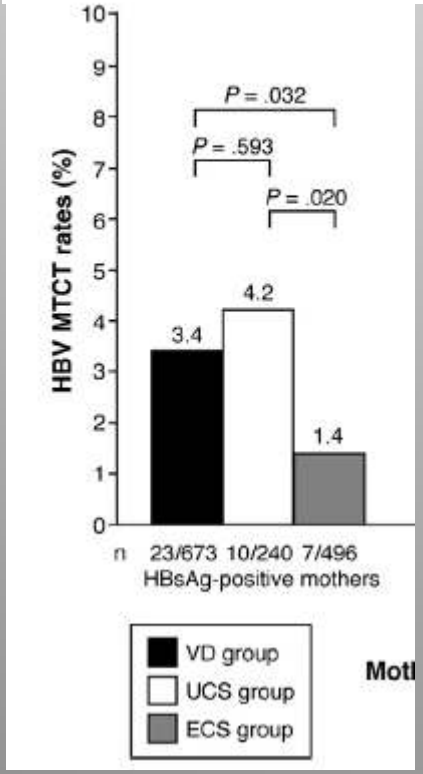
f Medicine, Mount Sinai Medical Center, Mount Sinai School of Medicine, New York, New York; [‡]Artificial Liver Center, Beijing ity, Beijing, China; [§]Department of Obstetrics and Gynecology, Beijing Youan Hospital, Capital Medical University, Beijing, , Peking University Science Health Centre, Beijing, China



HBsAg (+) gebeler	Perinatal bulaş (%)
VD (n=673)	3,4
AS (n=240)	4,2
ES (n=496)	1,4

Pan CQ et al. Clin Gastroenterol Hepatol 2013;11:1349

CLINICAL GASTROENTEROLOGY AND HEPATOLOGY 2013;11:1349–1355

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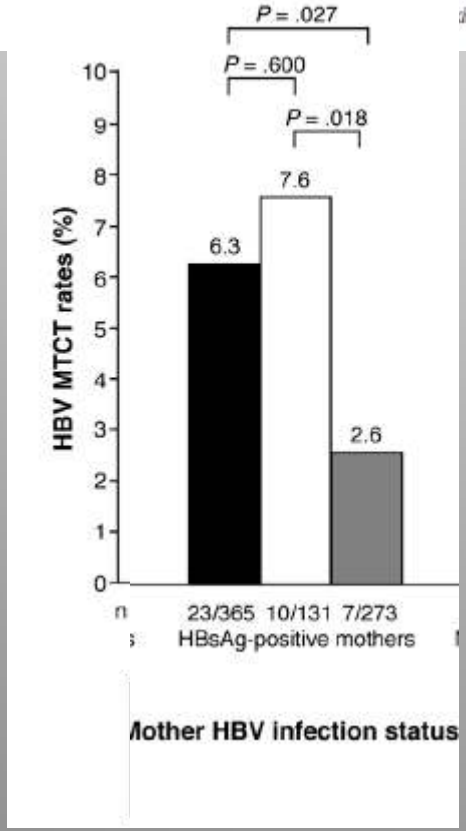
dicine, Mount Sinai Medical Center, Mount Sinai School of Medicine, New York, New York; [‡]Artificial Liver Center, Beijing ejing, China; [§]Department of Obstetrics and Gynecology, Beijing Youan Hospital, Capital Medical University, Beijing, ing University Science Health Centre, Beijing, China



HBeAg (+) gebeler	Perinatal bulaş (%)
VD (n=365)	6,3
AS (n=131)	7,6
ES (n=273)	2,6

Pan CQ et al. Clin Gastroenterol Hepatol 2013;11:1349

CLINICAL GASTROENTEROLOGY AND HEPATOLOGY 2013;11:1349–1355

Cesarean Section Reduces Perinatal Transmission of Hepatitis B Virus Infection From Hepatitis B Surface Antigen–Positive Women to Their Infants

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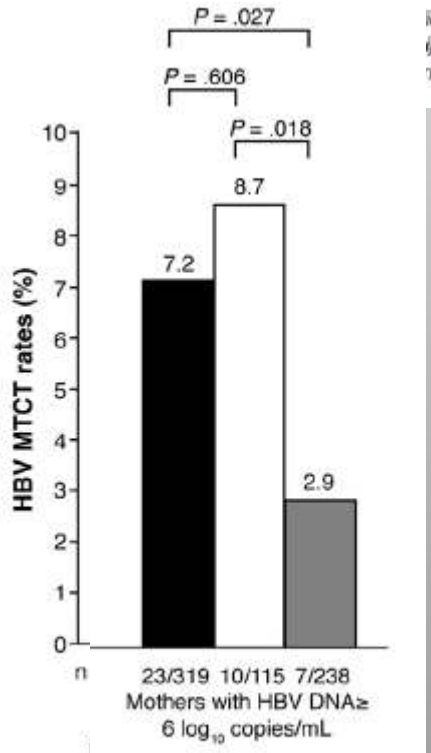

tus

HBV DNA>10^6 gebeler	Perinatal bulaş (%)
VD (n=319)	7,2
AS (n=115)	8,7
ES (n=238)	2,9

Pan CQ et al. Clin Gastroenterol Hepatol 2013;11:1349

CLINICAL GASTROENTEROLOGY AND HEPATOLOGY 2013;11:1349–1355

Cesarean Section Reduces Perinatal Transmission of Hepatitis B Virus Infection From Hepatitis B Surface Antigen–Positive Women to Their Infants

CALVIN Q. PAN,* HUAI-BIN ZOU,‡ YU CHEN,‡ XIAOHUI ZHANG,‡ HUA ZHANG,§ JIE LI,‖ and ZHONGPING DUAN‡

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HBV DNA <1000000 kopya/ml gebelerde doğum yolundan bağımsız olarak perinatal bulaş görülmemektedir,

HBeAg (+), HBV DNA >1000000 kopya/ml gebelerde ES perinatal bulaşı azaltır.

Pan CQ et al. Clin Gastroenterol Hepatol 2013;11:1349

REVIEW

Caesarean section to prevent transmission of hepatitis B: A meta-analysis

Matthew S Chang MD[1], Sravanya Gavini MD[1], Priscila C Andrade PharmD[2], Julia McNabb-Baltar MD[1]

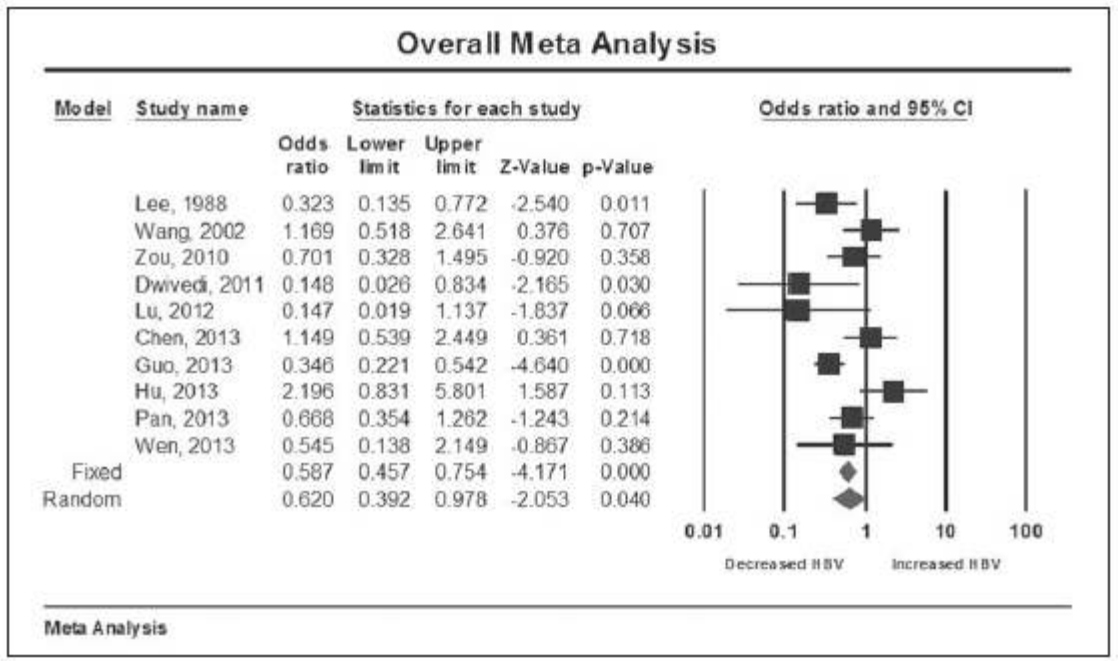
MS Chang, S Gavini, PC Andrade, J McNabb-Baltar. Caesarean section to prevent transmission of hepatitis B: A meta-analysis. Can J Gastroenterol Hepatol 2014;28(8):439-444.

La césarienne pour éviter la transmission de l'hépatite B : une méta-analyse

2012'den sonra yayınlanmış en güncel metaanaliz,
9 retrospektif kohort, 1 vaka kontrol çalışması
C/S (n=2352) vs VD (n=2739)

Perinatal bulaş C/S %5 vs VD %10

Chang MS et al. Can J Gastroenterol Hepatol 2014;28:439



Metaanaliz OR 0,62, p=0,04
C/S ile VD'a göre vertikal bulaş olasılığı azalmaktadır.

Chang MS et al. Can J Gastroenterol Hepatol 2014;28:439

REVIEW

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La césarienne pour éviter la transmission de l'hépatite B : une méta-analyse

C/S vertikal bulaşın önlenmesinde ek yarar sağlayabilir ancak yararın gerçek derecesi belirsizdir, HBIg kullanım oranlarıyla değişkenlik göstermektedir.

Bulaşın önlenmesinde C/S yararı en fazla HBV DNA düzeyleri yüksek HBeAg (+) gebelerde ortaya çıkabilir.

Mevcut kanıtlara göre HBV bulaşının önlenmesinde C/S lehine ya da aleyhine bir öneride bulunulamaz.

Chang MS et al. Can J Gastroenterol Hepatol 2014;28:439

Zheng et al. BMC Public Health 2011, 11:502
http://www.biomedcentral.com/1471-2458/11/502

BMC Public Health

RESEARCH ARTICLE Open Access

Should chronic hepatitis B mothers breastfeed? a meta analysis

Yingjie Zheng[1,2*], Yihan Lu[1,2], Qi Ye[3], Yugang Xia[1,2], Yueqin Zhou[3], Qingqing Yao[1,2] and Shan Wei[1,2]

Metaanaliz

32 çalışma, 5650 bebek

Zheng Y et al. BMC Public Health 2011;11:502

Zheng *et al. BMC Public Health* 2011, **11**:502
http://www.biomedcentral.com/1471-2458/11/502

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Bebeklerin uygun biçimde aşılanması durumunda, enfektivitesi yüksek anneler dahil, KHB'li annelerin emzirmesi bebeklerde enfeksiyon açısından ek bir risk oluşturmaz.

Zheng Y et al. BMC Public Health 2011;11:502

Hepatitis B and breastfeeding

A statement prepared jointly by the Global Programme for Vaccines and Immunization (GPV) and the Divisions of Child Health and Development (CHD), and Reproductive Health (Technical Support) (RHT) World Health Organization

HBV enfekte anneden emzirme ile bebeğe HBV bulaş riskinin arttığına dair kanıt yoktur.

HBV enfeksiyonunun yüksek endemik olduğu bölgelerde ve bağışıklama olanağı olmasa dahi emzirmeye devam edilmesi önerilir.

Gebelerde antiviral tedavi endikasyonları, gebe olmayan hastalardan farklı değildir.

Sirotik olmayan hastalarda özellikle hastalık aktivitesi düşük ve HBV DNA ve ALT düzeyleri yüksek değilse, tedavinin başlanması ertelenebilir.

Tedavi başlanması planlanan gebelerde TDF güvenilir bir seçenektir.

HBV DNA 6 log kopya/ml üzerinde ise profilaksi etkinliğini yitiriyor.

HBeAg (+) ve HBV DNA >200000 IU/ml gebelerde perinatal bulaşın önlenmesi için 3. trimesterda antiviral tedavi önerilir.

Kronik HBV enfeksiyonu olan gebelerde LAM, LdT, TDF HBV DNA düzeylerini düşürmektedir.

Gebelerde LAM, LdT, TDF kullanımı 6-12. ayda bebekte HBsAg ve HBV DNA pozitifliğini %70'in üzerinde azaltmaktadır ve fetal ya da maternal sağlığı olumsuz etkilemez.

C/S vertikal bulaşın önlenmesinde ek yarar sağlayabilir ancak yararın gerçek derecesi belirsizdir.

Bulaşın önlenmesinde C/S yararı en fazla HBV DNA düzeyleri yüksek HBeAg (+) gebelerde ortaya çıkabilir.

HBV enfekte anneden emzirme ile bebeğe HBV bulaş riskinin arttığına dair kanıt yoktur.