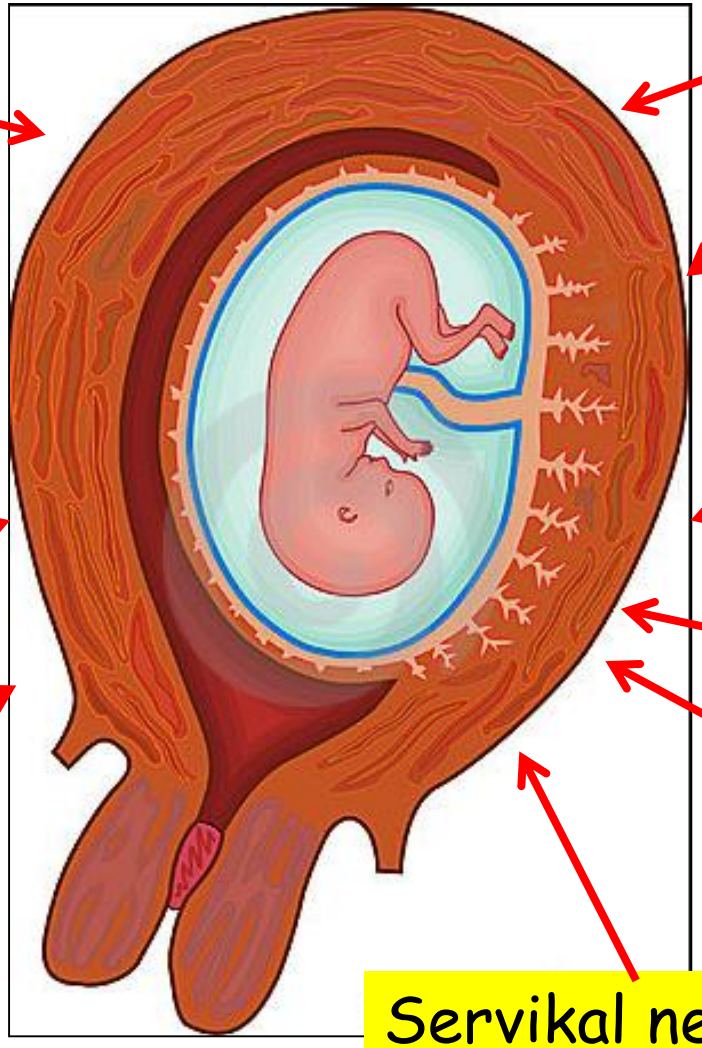
Kısa Serviks
Tanı ve Yönetim

Prof.Dr.Sermet Sağol
EÜTF Kadın Hastalıkları ve Doğum AD

Kısa Serviks / Erken Doğum



Progesteron etkisinde azalma

Uterin gerilme

Genetik
Yaşam tarzı

Desidual reaksiyon

Maternal/fetal
Allojenik reaksiyon

Vasküler hastalıklar

Stres

Enfeksiyon

Bilinmeyen nedenler

Servikal nedenler

A short cervix in women with preterm labor and intact membranes: A risk factor for microbial invasion of the amniotic cavity

Ricardo Gomez,[a] Roberto Romero,[b,*] Jyh Kae Nien,[b] Tinnakorn Chaiworapongsa,[c] Luis Medina,[a] Yeon Mee Kim,[c,d] Bo Hyun Yoon,[e] Mario Carstens,[a] Jimmy Espinoza,[b] Jay D. Iams,[f] Rogelio Gonzalez[a]

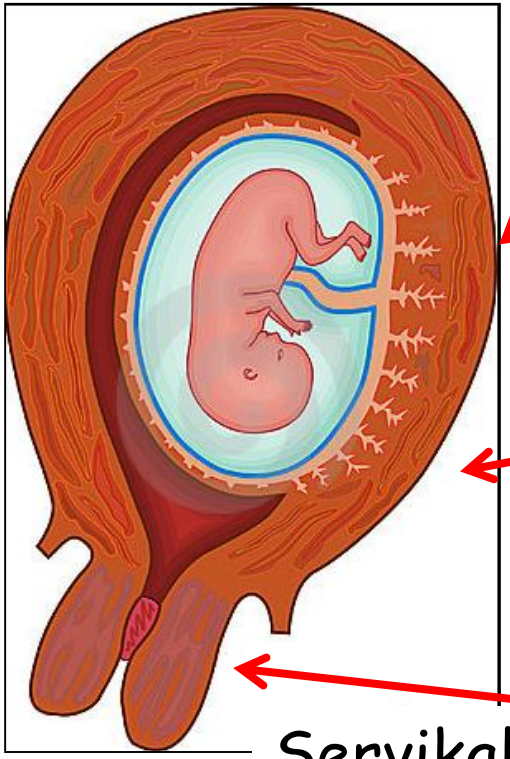
American Journal of Obstetrics and Gynecology (2005) **192**, 678–89

Table II Risk of microbial invasion of the amniotic cavity (MIAC) according to cervical length and gestational age

	Gestational age (wk)			
Cervical length (mm)	≤35	≤32	≤30	≤28
<15	26.3% (15/57)	33.3% (10/30)	42.9% (9/21)	45.5% (5/11)
15-29	5.5% (10/183)	4.8% (4/84)	6.3% (2/32)	11.8% (2/17)
≥30	1.9% (3/161)	2.5% (2/79)	2.3% (1/44)	0% (0/24)
Prevalence of MIAC	7.0% (28/401)	8.3% (16/193)	12.4% (12/97)	13.5% (7/52)

Kısa Serviks / Erken Doğum

Desidua
Korion
Amnion
Myometrium
Aktivasyon/Hasar



Uterin kontraksiyon

Membran rüptürü

Servikal dilatasyon

Servikal uzunluk ölçümü.

(1) Vaginal ultrason

(2) Mesane boş

(3) Prob anterior fornikste

(4) Görüntü ekranın % 50 - 75'i

(5) Aşırı baskı uygulanmamalı

Ön ve arka duvarlar eşit kalınlıkta

(6) Midsagital, uzun –aks görüntüsü

(7) İç ve dış servikal delikler net görülmeli.

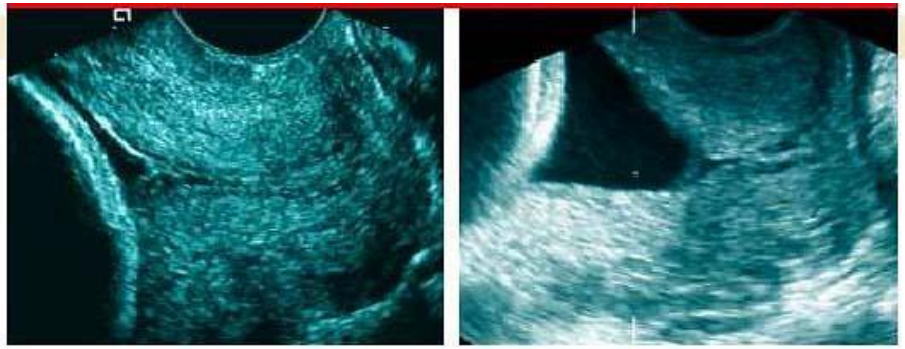
(8) Delikler arası kanal ölçülmeli.

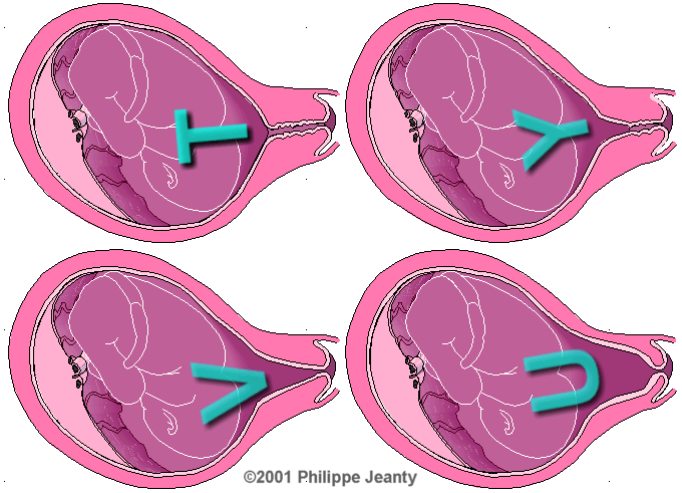
(9) En az 3 – 5 dakika görüntüle, 3 görüntü/ölçüm

(10) En iyi ve en kısa ölçümü değerlendir.

%5 olguda fundal bası ile servikal değişiklik olabilir.

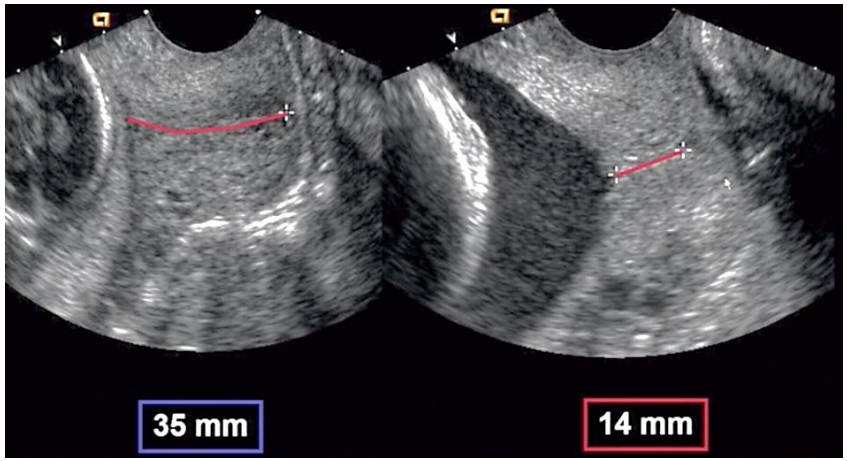
(12) **16** – 18 hf (yüksek risk) / 18 – **24 hf** (düşük risk).

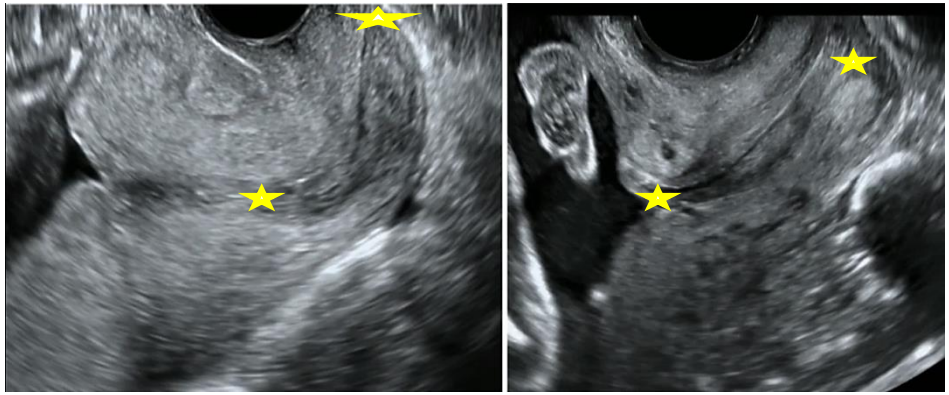


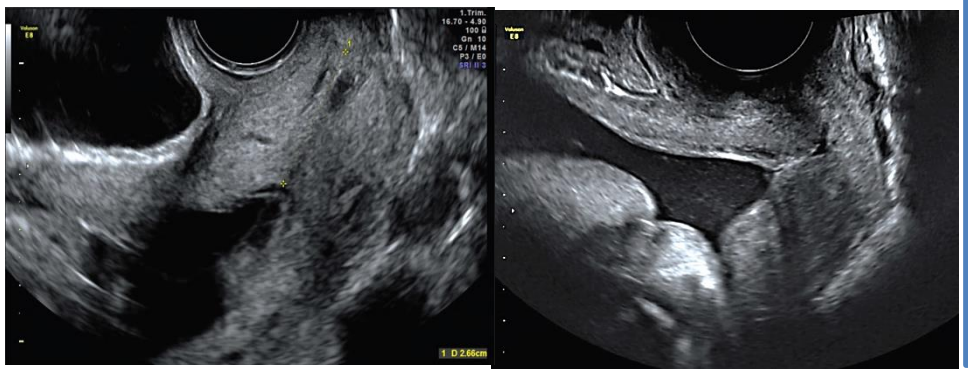


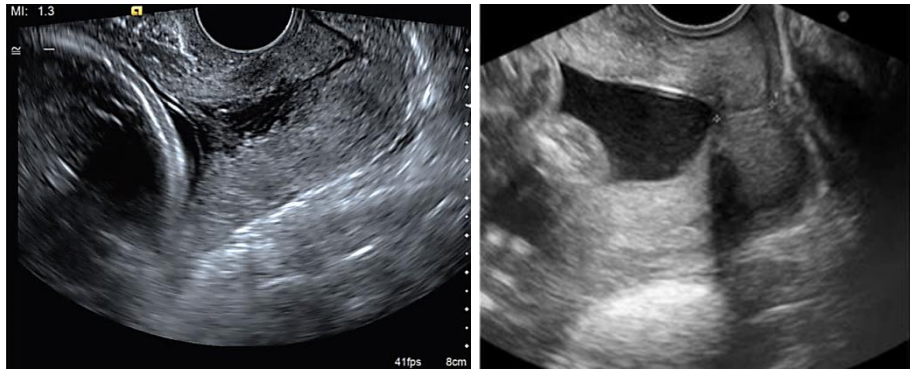
Iams JD, Am J Obstet Gynecol, 2013.

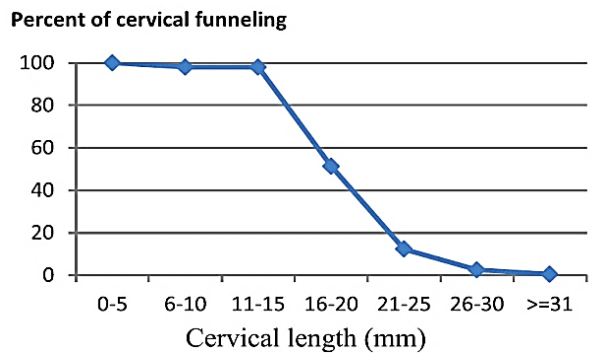
Servikal uzunluk ölçümü





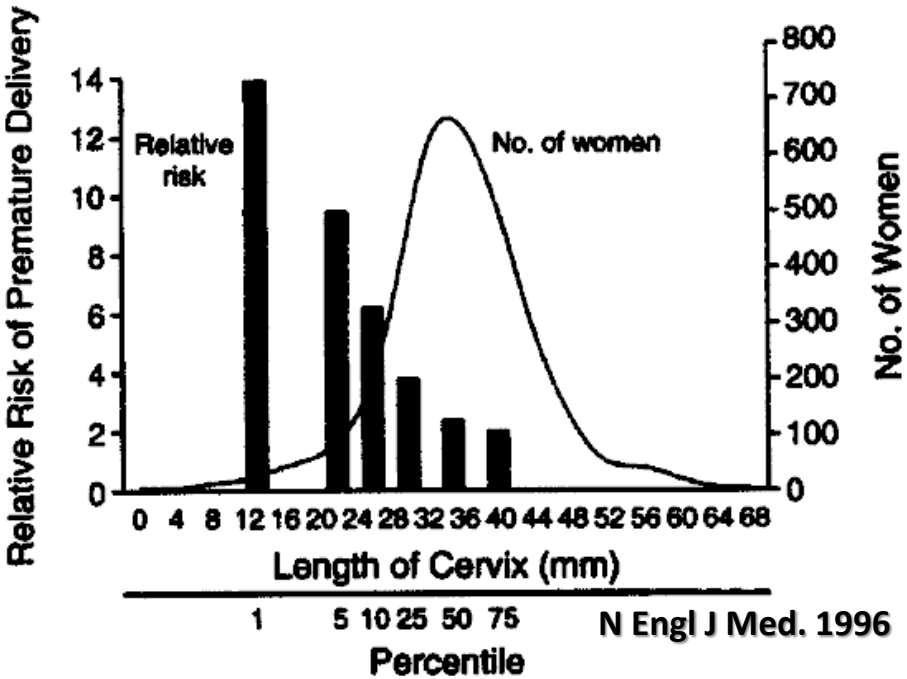


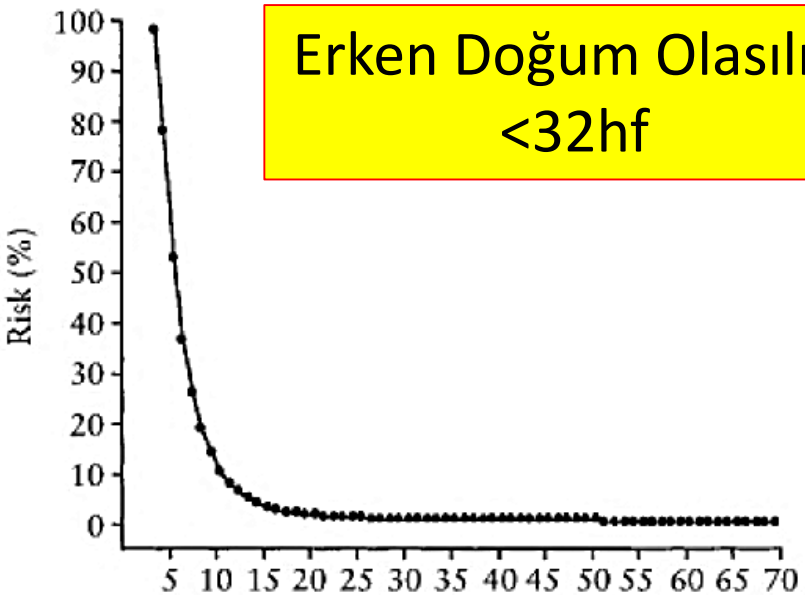




Kısa serviks ?

- 20-24hf, ortalama 36 mm
- 16-24hf arası <u>kısa serviks</u>
  - Yüksek risk grubu
    - < 25 mm
  - Düşük risk grubu < 15-25 mm
    - < 20 mm (% 5)
  - İkiz gebelik
    - < 20 mm





Erken Doğum Olasılığı <32hf

Kısa Serviks / Erken Doğum

- ✓ Asemptomatik olgular
  - ✓ Düşük riskli
  - ✓ Yüksek riskli
- ✓ Semptomatik olgular

Kısa serviks

- Cerrahi
  - Serklaj
- Pesser
- Tıbbi
  - Progesteron
  - 17 OHP-c
  - Tokolitikler
  - Antibiyotik

Effectiveness of cerclage according to severity of cervical length shortening: a meta-analysis

V. BERGHELLA, *Ultrasound Obstet Gynecol* 2010

Erken doğum öyküsü olmayan olgularda **anlamlı fark yok.**

Erken doğum öyküsü olan olgularda SU< 25mm, serklaj uygulaması 37/35/32.hf öncesi erken doğumu engellemede anlamlı.

Erken Doğum < 35 hafta (%)	*Cerclage*	*No cerclage*	*RR (95% CI)*
No previous PTB			
CL ≤ 5.9 mm	17/35 (48.6)	17/26 (65.4)	0.74 (0.49–1.15)
CL 6–10.9 mm	17/53 (32.1)	14/41 (34.1)	0.94 (0.53–1.69)
CL 11–15.9 mm	7/54 (13.0)	18/72 (25.0)	0.49 (0.22–1.04)
CL 16–20.9 mm	2/14 (14.3)	1/8 (12.5)	1.14 (0.16–8.47)
CL 21–24.9 mm	1/15 (6.7)	3/26 (11.5)	0.58 (0.08–3.74)
CL ≤ 15.9 mm	41/142 (28.9)	49/139 (35.3)	0.82 (0.58–1.15)
CL 16–24.9 mm	3/29 (10.3)	4/34 (11.8)	0.88 (0.23–3.32)
CL < 25 mm*	44/171 (25.7)	53/173 (30.6)	0.84 (0.60–1.18)
Previous PTB < 37 weeks			
CL ≤ 5.9 mm	5/10 (50.0)	8/9 (88.9)	0.56 (0.29–1.09)
CL 6–10.9 mm	2/12 (16.7)	5/13 (38.5)	0.43 (0.11–1.59)
CL 11–15.9 mm	7/20 (35.0)	9/23 (39.1)	0.89 (0.41–1.96)
CL 16–20.9 mm	4/23 (17.4)	5/17 (29.4)	0.59 (0.19–1.81)
CL 21–24.9 mm	7/42 (16.7)	12/39 (30.8)	0.54 (0.24–1.23)
CL ≤ 15.9 mm	14/42 (33.3)	22/45 (48.9)	0.68 (0.40–1.15)
CL 16–24.9 mm	11/65 (16.9)	17/56 (30.4)	0.56 (0.29–1.07)
CL < 25 mm*	25/107 (23.4)	39/101 (38.6)	0.61 (0.40–0.92)†

Cervical stitch (cerclage) for preventing preterm birth in singleton pregnancy (Review)

Alfirevic Z, Cochrane, 2012.

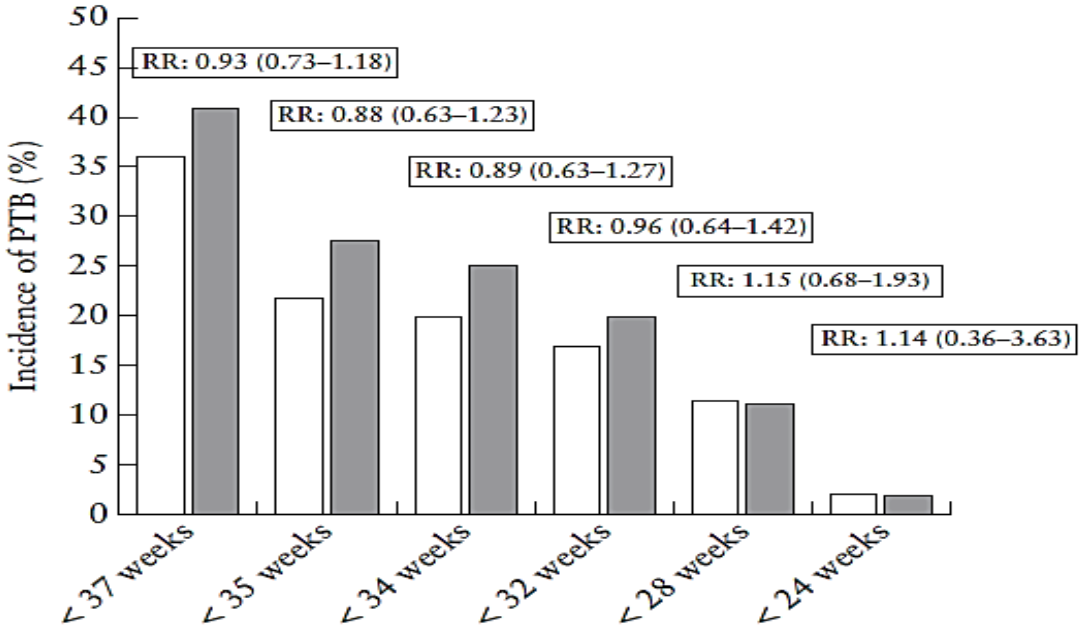
- 12 çalışma (3328 gebe). Erken doğum öyküsü // kısa serviks
- **Preterm doğum (RR 0.80; CI 0.69 - 0.95).**
- **Perinatal ölüm (% 8.4 / % 10.7) (RR 0.78; CI 0.61 - 1.00)**

Neonatal morbidite (% 9.6 / % 10.2) (RR 0.95; CI 0.63 - 1.43)

Cerclage for sonographic short cervix in singleton gestations <u>without prior spontaneous preterm birth</u>: systematic review and meta-analysis of randomized controlled trials using individual patient-level data. V. BERGHELLA, Ultr Obstet Gynecol, 2017.

Düşük risk grubu Kısa serviks/Serklaj

Outcome[ref]	*Cerclage* (n=224)	*No cerclage* (n=195)	*RR or MD (95% CI)*
GA at delivery (weeks)[25,32–35]	35.81	35.59	0.22 (–0.58 to 1.02)
Latency (days)[25,32–35]	86.68	83.41	3.27 (–3.22 to 9.76)
PPROM[32,34,35]	34/166 (20.5)	23/169 (13.6)	1.52 (0.94 to 2.46)



Düşük risk grubu Kısa serviks/Serklaj

Düşük risk gurubu tekiz gebeliklerde SU <25 mm , serklaj erken doğumu engellemede veya neonatal sonuçları iyileştirmede etkin değil.
Ancak SU < 10 mm, serklaj ve tokoliz ve/veya antibiyotik birlikte kullanımı faydalı olabilir.

Subgroup **< 35 hf**	*Cerclage*	*No cerclage*	*RR (95% CI)*
TVS-CL ≤ 20 mm ($n = 349$)[25,32–35]	47/188 (25.0)	51/161 (31.7)	0.79 (0.56 to 1.10)
TVS-CL ≤ 15 mm ($n = 305$)[25,32–35]	43/159 (27.0)	49/146 (33.6)	0.81 (0.57 to 1.13)
TVS-CL < 10 mm ($n = 126$)[25,32–35]	30/76 (39.5)	29/50 (58.0)	0.68 (0.47 to 0.98)*
TVS-CL < 5 mm ($n = 48$)[25,32–35]	15/27 (55.6)	15/21 (71.4)	0.79 (0.50 to 1.23)
Tocolytics and cerclage *vs* no tocolytics and no cerclage ($n = 254$)[25,32–35]	20/114 (17.5)	40/140 (28.6)	0.61 (0.38 to 0.98)*
Tocolytics and cerclage *vs* tocolytics and no cerclage (n = 169)[25,32,33,35]	20/114 (17.5)	18/55 (32.7)	0.54 (0.31 to 0.93)*

V. BERGHELLA, Ultr Obstet Gynecol, 2017

Kısa serviks ve Pesser

Location	Hui et al.[18] China	Goya et al.[19] Spain	Nicolaides et al.[20] International*
Number of randomised patients	108	385	935
Number of patients included in primary outcome analysis (Pessary vs control)	53 vs 55	190 vs 190	460 vs 464
Cervical length cut-off	<25 mm	≤25 mm	≤25 mm
Cervical length at randomisation (mm) (Pessary vs control) Mean ± SD Median (IQR)	19.6 (0.5) vs 20.5 (0.4)	19.0 (4.6) vs 19.0 (4.9)	20 (14–22) vs 20 (15–22)
GA at randomisation (weeks) (Pessary vs control) Mean ± SD Median (IQR)	21.9 (0.8) vs 21.9 (0.8)	22.2 (0.9) vs 22.4 (0.9)	23.4 (22.6–24.3) vs 23.6 (22.7–24.4)
Device evaluated	Arabin® Pessary from randomisation to 37 weeks or preterm labour/delivery, prelabour rupture of membranes, active vaginal bleeding	Arabin® Pessary from randomisation to 37 weeks or preterm labour/delivery, prelabour rupture of membranes, active vaginal bleeding, or patient discomfort	Arabin® Pessary from randomisation to 37 weeks or preterm labour/delivery, prelabour rupture of membranes, active vaginal bleeding, or patient discomfort.
Primary outcome	SPTB < 34 weeks	SPTB < 34 weeks	SPTB < 34 weeks
SPTB < 34 weeks (%) (Pessary vs control)	9.4 vs 5.5	6.3 vs 26.8	12.0 vs 10.8
P	0.46	<0.0001	0.57
OR (95% CI)	1.04 (0.94–1.12)	0.18 (0.08–0.37)	1.12 (0.75–1.69)

Kısa Serviks ve Pesser

Cervical Pessary for Prevention of Preterm Birth: A Meta-Analysis

Xin-Hang Jin, Sci Rep, 2017.

Cervical Pessary for Preventing Preterm Birth in Singleton Pregnancies With Short Cervical Length: A Systematic Review and Meta-analysis.

Gabriele S, J Ultrasound Med, 2017.

Study or Subgroup	cervical pessary Events	Total	Control Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
Goya 2012	12	190	51	190	35.9%	0.24 [0.13, 0.43]
Hui 2013	5	53	3	55	26.2%	1.73 [0.43, 6.88]
Nicolaides 2016	55	460	50	464	37.9%	1.11 [0.77, 1.59]
Total (95% CI)		**703**		**709**	**100.0%**	**0.71 [0.21, 2.43]**
Total events	72		104			

Heterogeneity: Tau² = 0.99; Chi² = 20.81, df = 2 (P < 0.0001); I² = 90%

Test for overall effect: Z = 0.54 (P = 0.59)

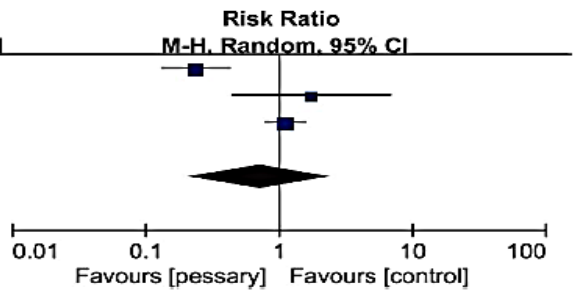


Figure 3. Efficacy of cervical pessary placement in preventing spontaneous preterm birth <34 weeks in women with a singleton pregnancy and a short cervix compared with control.

17 alpha-hydroxyprogesterone caproate does not prolong pregnancy or reduce the rate of preterm birth in women at high risk for preterm delivery and a short cervix: a randomized controlled trial. Norbert Winer, Am J Obstet Gynecol, 2015.

105, erken doğum riski yüksek olgu

Servikal uzunluk < 25mm

Haftalık 500 mg 17 OHP-C, 16 -36 hf kadar.

Obstetric outcomes

Characteristics	17P	No 17P	Mean difference (95% CI)	Relative risk (95% CI)	*P* value
Patients randomized, n	51	54			
Intention-to-treat analysis					
Analysis with censoring at last follow-up					
Time to delivery (d), mean (SE)[a]	76 (5)	72 (5)	4 (−9 to 17)		.48[b]
Delivery <37 wks, n (%)	23 (45)	24 (44)	+1% (−18 to 19)	1.01 (0.66–1.55)	> .99
Delivery <34 wks, n (%)	12 (24)	16 (30)	−6% (−22 to 11)	0.79 (0.42–1.51)	.51
Delivery <32 wks, n (%)	7 (14)	11 (20)	−7% (−21 to 8)	0.67 (0.28–1.60)	.44

Progesterone and the Risk of Preterm Birth among Women with a Short Cervix

Fonseca EB, N Engl Med J, 2007.

24,620 genel gebe popülasyonu, 20 – 25 hf

TVU Servikal uzunluk < 15 mm, % 1,7 (413 gebe)

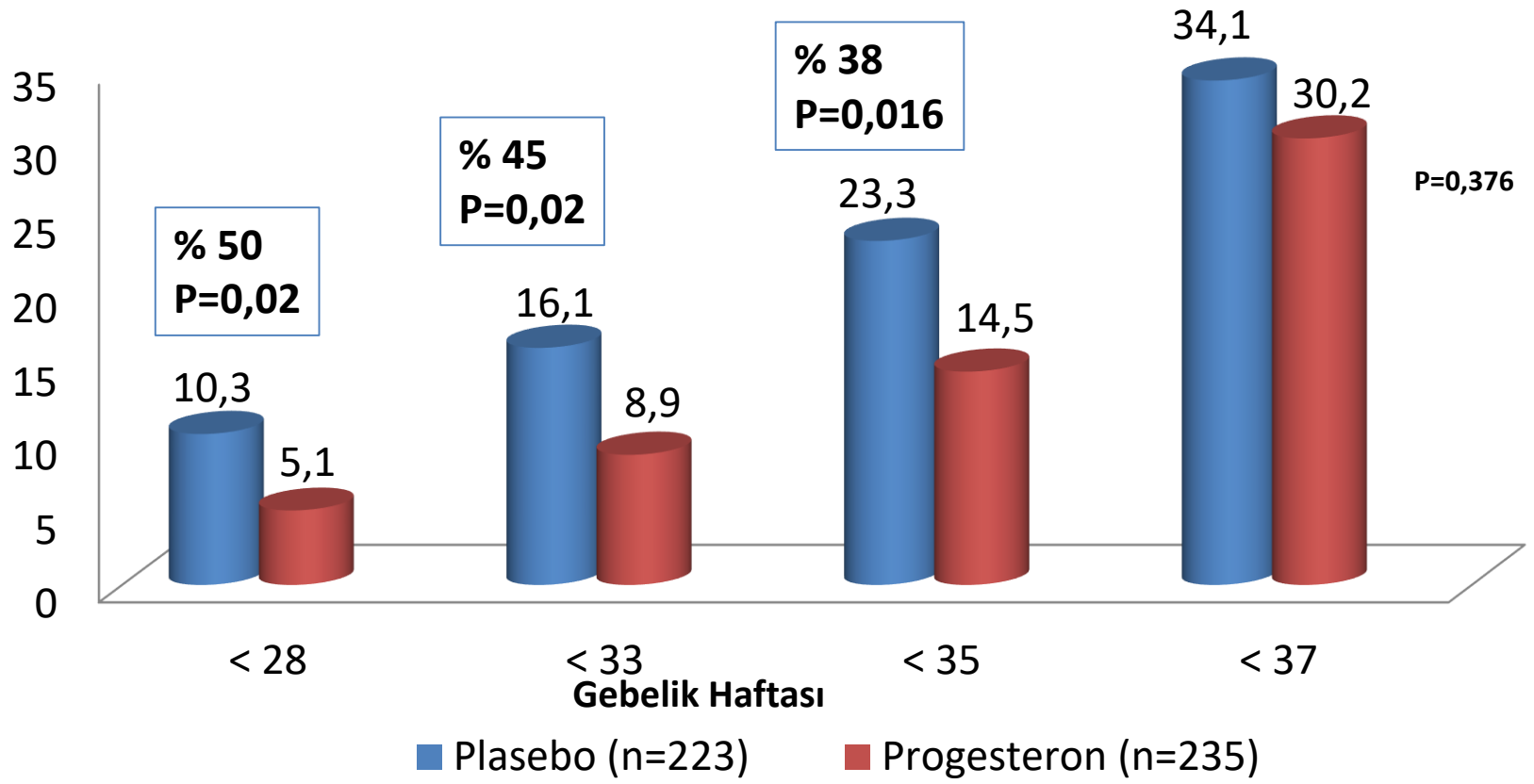
200 mg vaginal progesteron kapsül

Outcome	Progesterone Group†	Placebo Group‡	Relative Risk (95% CI)	P Value
	no. (%)			
Maternal	**% 40 azalma**			
Spontaneous delivery at <34 wk	24 (19.2)	43 (34.4)	0.56 (0.36–0.86)	0.007
Any delivery at <34 wk	26 (20.8)	45 (36.0)	0.58 (0.38–0.87)	0.008
Composite adverse outcomes	11 (8.1)	19 (13.8)	0.59 (0.26–1.25)	0.17
Intraventricular hemorrhage§	1 (0.7)	2 (1.4)	0.51 (0.05–5.30)	0.58
Respiratory distress syndrome	11 (8.1)	19 (13.8)	0.59 (0.26–1.25)	0.17

Vaginal progesterone reduces the rate of preterm birth in women with a sonographic short cervix: a multicenter, randomized, double-blind, placebo-controlled trial

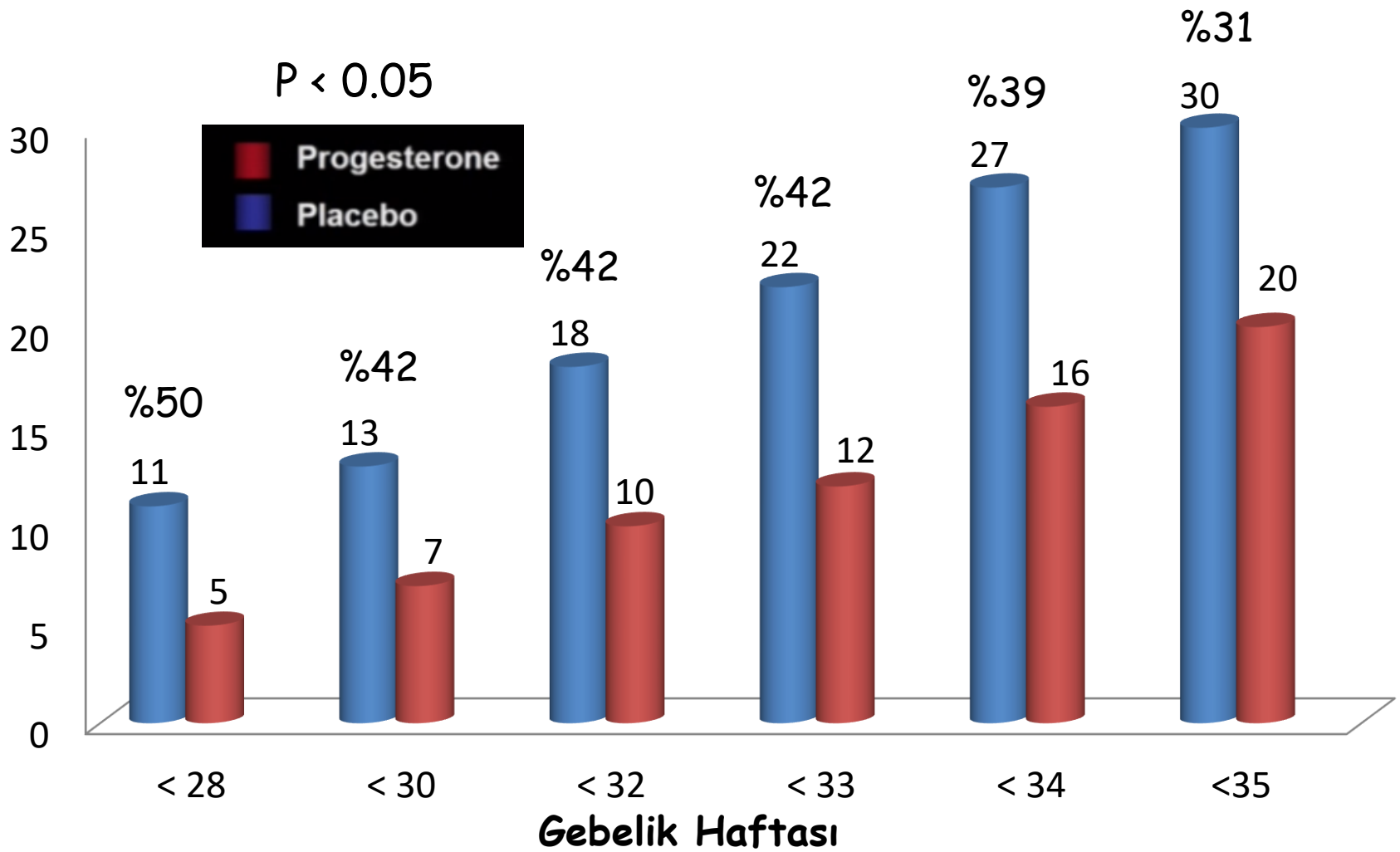
S. S. HASSAN, Ultrason Obstet Gynecol, 2011

- 19–24 hf, 32 091 gebe
- TVU-servikal uzunluk (10-20 mm) , % 2.3 (733 gebe)
  - (458 gebe, vaginal 90 mg bioadesiv progesterone jel)
- RDS % 60 azalma (% 3.0 - 7.1)



Vaginal progesterone in women with an asymptomatic sonographic short cervix in the midtrimester decreases preterm delivery and neonatal morbidity: a systematic review and metaanalysis of individual patient data
Romero R, Am J Obstet Gynecol, 2012.

Kısa serviks <25mm



Vaginal progesterone in women with an asymptomatic sonographic short cervix in the midtrimester decreases preterm delivery and neonatal morbidity: a systematic review and metaanalysis of individual patient data
Roberto Romero, Am J Obstet Gynecol, 2012.

Subgroup analyses of effect of vaginal progesterone on preterm birth <33 weeks of gestation and composite neonatal morbidity/mortality[a]

	Preterm birth <33 wk of gestation			Composite neonatal morbidity/mortality[a]		
Subgroup	n	RR (95% CI)	Interaction *P* value	n	RR (95% CI)	Interaction *P* value
Patient characteristics						
Cervical length, mm			.32			.93
<10	79	0.83 (0.49–1.41)		90	0.62 (0.28–1.38)	
10-20 ★	653	0.52 (0.35–0.76)		680	0.54 (0.35–0.84)	
21-25	43	0.50 (0.10–2.41)	.68	57	0.55 (0.26–1.19)	.40
Obstetric history						
With no previous preterm birth	606	0.61 (0.42–0.89)		658	0.62 (0.43–0.91)	
With ≥1 previous preterm birth	169	0.54 (0.30–0.98)		169	0.41 (0.17–0.96)	
Daily dose of vaginal progesterone, mg			.57			.92
90-100	504	0.53 (0.33–0.85)		511	0.58 (0.35–0.95)	
200	271	0.63 (0.41–0.96)		316	0.56 (0.34–0.94)	

Table 2. Characteristics of the randomised trials assessing the efficacy of progestins for the prevention of preterm birth among women in the general population with an ultrasound-identified short cervix

Location	Fonseca et al.[15] International*	Hassan et al.[16] International**	Grobman et al.[21] United States
Number of randomised patients	250	465	657
Number of patients included in primary outcome analysis (Progestins vs placebo)	125 vs 125	235 vs 223	327 vs 330
Cervical length cut-off	≤15 mm	between 10 and 20 mm	<30 mm
Cervical length at randomisation (mm) (Progestins vs placebo) Mean ± SD Median (IQR)	11.0 (9–14) vs 12.0 (9–14)	18 (16–19) vs 18 (15–19)	23.9 (5.6) vs 23.8 (5.7)
GA at randomisation (weeks) (Progestins vs placebo) Mean ± SD Median (IQR)	23^{+4} (22^{+5}–24^{+0}) vs 23^{+3} (22^{+6}–24^{+1})	21.7 (20.7–23.0) vs 21.7 (20.4–22.9)	21.4 (1.2) vs 21.3 (1.3)
Progestins	Vaginal progesterone (200-mg capsule/day from 24 to 34 weeks)	Vaginal progesterone gel (90–mg progesterone/day from 20–24 to 37 weeks)	17OHP–C (250 mg weekly, IM from 16–22 to 37 weeks)
Primary outcome	SPTB < 34 weeks	PTB < 33 weeks	PTB < 37 weeks
Primary outcome (%) (Progestins vs placebo)	19.2 vs 34.4	8.9 vs 16.1	25.1 vs 24.2
P	0.02	0.02	NS
RR (95% CI)	0.56 (0.32–0.91)	0.54 (0.33–0.89)	1.03 (0.79–1.35)

Universal cervical length screening and treatment with vaginal progesterone to prevent preterm birth: a decision and economic analysis

Cahill AG,Am J Obstet Gynecol, 2010.

Universal cervical-length screening to prevent preterm birth: a cost-effectiveness analysis

E. F. WERNER,Ultr Obstet Gynecol, 2011.

Cost-effectiveness of risk-based screening for cervical length to prevent preterm birth.

Einersan BD, Am J Obstet Gynecol 2016.

Tüm gebelerde rutin servikal uzunluk taraması ve kısa serviks (< 15 / 20 mm) saptanan olgularda vaginal progesteron kullanımı mantıklı.

Progesterone and the Risk of Preterm Birth among Women with a Short Cervix

Fonseca EB, N Engl Med J, 2007.

24,620 genel gebe popülasyonu (413 ikiz), 20 – 25 hf 1.300.00

Erken Doğum < 34hf % 2,1 (489) 27.300

TVU Servikal uzunluk < 15 mm, % 1.7 (413 gebe) 22.100

126 (% 30,9) ED olguların % 24 6.829

50 (% 40) erken doğum engellenebilir. 2.731

Tüm erken doğumların % 9,6

TVU Servikal uzunluk 16-25 mm, %8,3 (1975) 107.900

100 (% 5,1) ED olguların % 20 5.503

40 (% 40) erken doğum engellenebilir. 2.201

Tüm erken doğumların % 7,7

Tekiz gebelik

Erken doğum öyküsü var veya yok.

Erken doğum riskinin belirlenmesi

TV US Servikal uzunluk

Erken doğum öyküsü yok

TVU 18 – 24 hf

Servikal cerrahi,

Uterin anomali

Asempt İkiz

Erken doğum öyküsü var

Progesteron öner

TVU 16 – 18 hf

< 20mm

34 hf kadar progesteron

1-2hf arayla izlem

< 10 mm serklaj/tokoliz ?

Progesteron

+

Öyküye göre

12-14 hf serklaj

< 25mm progesteron ve serklaj

25-29mm 1hf

30-34mm 2hf

>35mm 3hf

24 hf kadar izlem

Semptomatik Olgularda Erken doğum Önceden Belirleme

Variable	Probability of delivery < 7 days		
	Pre-test	Positive test	Negative test
No fetal breathing	10 %	27 %	5 %
Positive fibronectin		54 %	3 %
Short cervix on ultrasound		42 %	3 %

Boots et al: AJOG 2014

Transvaginal cervical length measurement for prediction of preterm birth in women with threatened preterm labor: a meta-analysis

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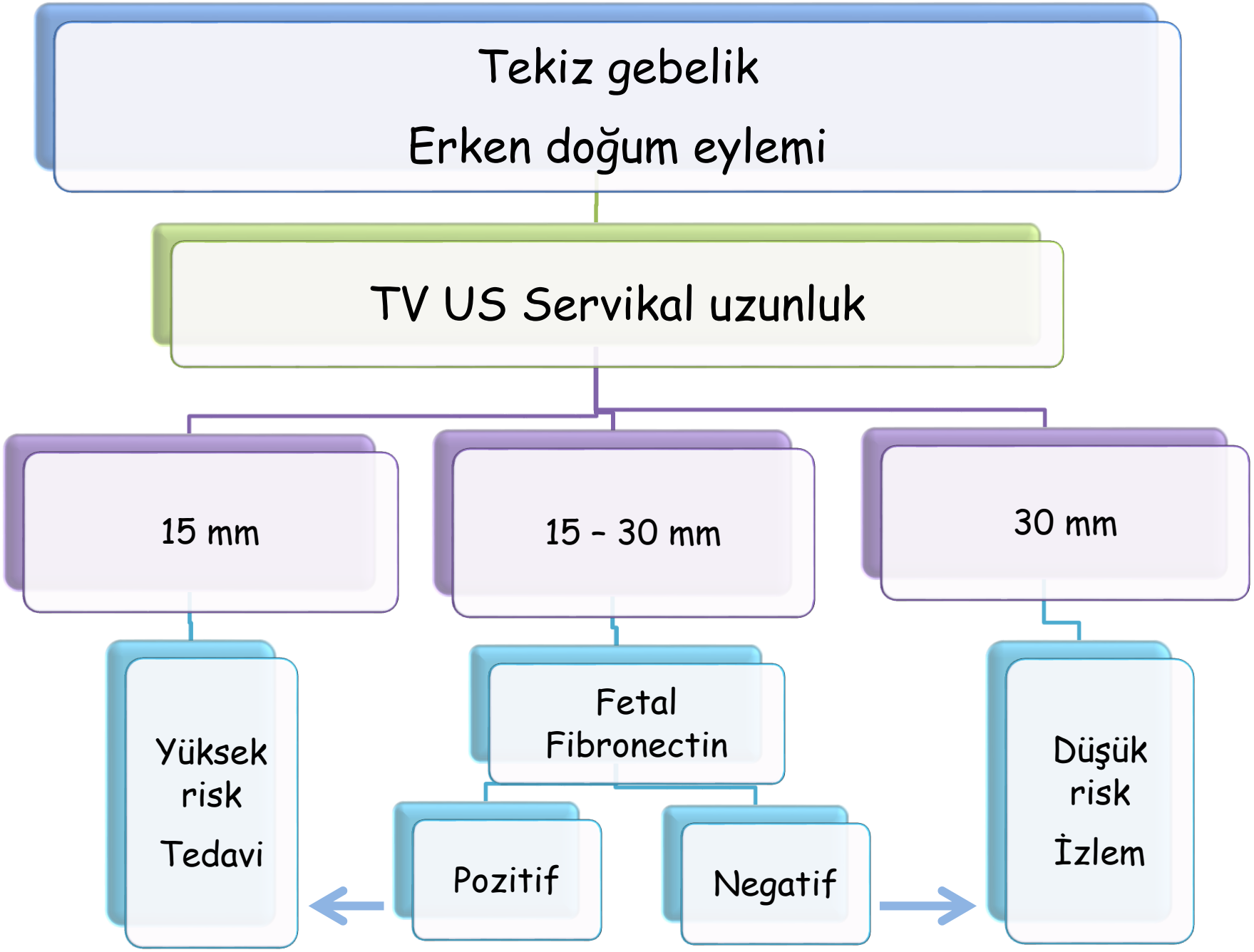
Cut-off for test	*48 h*	*7 days*	*32 weeks*	*34 weeks*
15 mm	**% 7**	**% 9 - 11**		**% 11 – 20**
Sensitivity (%)	71.1 (59.5–80.9)	59.9 (52.7–66.8)	63.0 (44.2–78.5)	46.2 (34.8–57.8)
Specificity (%)	86.6 (84.6–88.5)	90.5 (89.0–91.9)	91.7 (86.4–95.1)	93.7 (90.7–96.0)
Number of women	1266	1781		429
I^2 sens/I^2 spec	88.7%/57.2%	91.0%/87.2%		88.9%/93.7%
LR+		5.71 (3.77–8.65)		4.31 (2.73–6.82)
LR–		0.51 (0.33–0.80)		0.63 (0.38–1.04)
25 mm				
Sensitivity (%)	88.0 (68.8–97.5)	78.3 (67.9–86.6)		64.3 (53.1–74.4)
Specificity (%)	58.9 (54.1–63.6)	70.8 (67.4–74.0)		68.4 (64.6–71.9)
Number of women	451	856		735
I^2 sens/I^2 spec	60.0%/0.0%	34.4%/89.8%		0.0%/95.2%
LR+	2.09 (1.70–2.57)	2.77 (2.15–3.59)		2.22 (1.43–3.44)
LR–	0.26 (0.10–0.68)	0.33 (0.22–0.50)		0.54 (0.41–0.72)
30 mm				
Sensitivity (%)	88.2 (65.7–96.7)	93.8 (79.9–98.3)		93.8 (82.8–98.7)
Specificity (%)	40.0 (35.1–45.0)	41.9 (36.9–47.0)		42.1 (36.3–48.2)
Number of women				328
I^2 sens/I^2 spec				59.9%/94%
LR+				1.57 (1.19–2.07)
LR–				0.20 (0.06–0.66)

Ultrasound Obstet Gynecol 2010; 35: 54–64



Audibert: J Obstet Gynaecol Can. 2010 32:307-12