



Antikoagulan Tedavi Olarak Düşük Moleküllü Heparin Ne Zaman, Ne Kadar Süre Uygulanmalıdır ?

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*TRSGO Bölgesel Toplantısı
Aydın, Ekim 2017*

Genel bilgi

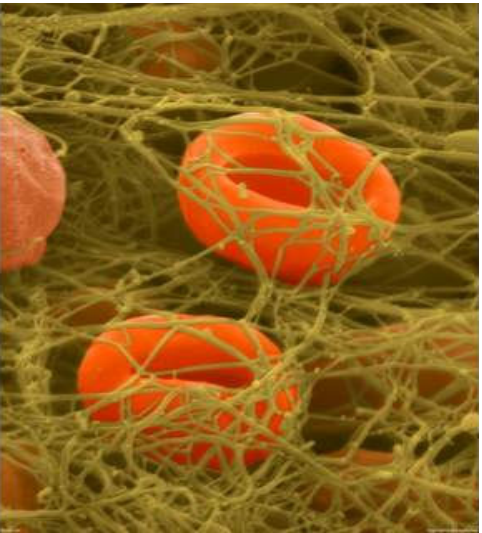
- ▶ **Pulmoner emboli, hastane ölümlerinin ÖNLENEBİLİR en yaygın sebebidir**
- ▶ **Jinekolojik onkolojik major operasyonlarda pulmoner emboli insidansı %4**

Tromboprofilaksi yapılmıyor olsaydı...

Patient Group	DVT Incidence (%)
Medical patients	10-25
Major gynecologic, urologic, or general surgery	15-40
Neurosurgery	15-40
Stroke	11-75
Knee/hip arthroplasty	40-60
Hip fracture	40-60
Major trauma	40-80
Spinal cord injury	60-80
Critical care patients	15-80

40-60 yaş arası kadınlarda VTE riski

n= 950.000



Yatan cerrahi hastalar: 1/140

Ayaktan cerrahi olan hastalar: 1/815

Poliklinik hastaları: 1/6200

Venöz tromboembolizm gelişimi

Venöz staz	Damar duvarında hasar	Hiperkoagülabilité
- Uzun süreli istirahat, yetersiz hareket, cerrahi girişim, hareketsizlik - Tümör, travma, immobilizasyona bağlı venöz staz - Kardiyak yetersizlik, konjestif kalp yetmezliği ve miyokard infarktüsüne bağlı venöz staz - Antitrombotik tedavi	- Damar yaralanması/travması - Kateter takılması - Derin ven trombozu öyküsü (variköz ven oluşumu-kapak hasarı) - Yapay kalp kapağı - Akut miyokard infarktüsü - Cerrahi girişim - Kemik kırıkları - Kalp damar hastalığı - Tümör invazyonu - Yanık	- Edinsel trombofiliiler - Derin ven trombozu - Cerrahi girişim - Antifosfolipid sendromu - Diğerleri - Kalıtsal trombofiliiler - Sık görülenler - Aktive edilebilir faktör III (FV Leiden) - Faktör V Leiden mutasyonu - Protrombin (G20210A) mutasyonu - Protein C eksiklikleri - Antitrombin III eksikliği

MEKANİK PROFİLAKSİ

FARMAKOLOJİK PROFİLAKSİ

Virchow triadı

Risk Factor for DVT or PE	Odds Ratio	95% Confidence Interval
Hospitalization		
With recent surgery	21.72	9.44-49.93
Without recent surgery	7.98	4.49-14.18
Trauma	12.69	4.06-39.66
Malignant neoplasm		
With chemotherapy	6.53	2.11-20.23
Without chemotherapy	4.05	1.93-8.52
Previous central venous catheter or pacemaker	5.55	1.57-19.58
Previous superficial vein thrombosis	4.32	1.76-10.61
Neurologic disease with extremity paresis	3.04	1.25-7.38
Varicose veins		
Age 45 yr	4.19	1.56-11.30
Age 60 yr	1.93	1.03-3.61
Age 75 yr	0.88	0.55-1.43
Congestive heart failure		
Thromboembolism not categorized as a cause of death at postmortem examination	9.64	2.44-38.10
Thromboembolism categorized as a cause of death at postmortem examination	1.36	0.69-2.68

Adapted from Heit JA, Silverstein MD, Mohr DN, et al. Risk factors for deep vein thrombosis and pulmonary embolism: A population-based case-control study. *Arch Intern Med.* 2000;160:809.

VTE profilaksisi

Farmakolojik

- ▶ LMWH
- ▶ Fondaparinux
- ▶ LDUH
- ▶ Warfarin
- ▶ Aspirin

Mekanik

- ▶ Elastik çorap
- ▶ Aralıklı pnömatik kompresyon



Farmakolojik tromboprofilaksi

LMWH

- ▶ Daha pahalı
- ▶ Renal yetmezlikte kontrendike
- ▶ Yarı ömrü daha uzun
- ▶ Trombositopeni riski düşük

LDUH

- ▶ Daha ucuz
 - ▶ Renal yetmezlikte kullanılabilir
 - ▶ Yarı ömrü kısa, daha sık yapılmalı
 - ▶ Trombositopeni riski daha yüksek
- ▶ VTE'yi önlemede benzer etkinlik

Cerrahi risk grupları

▶ **Cerrahinin kendisi**

- ▶ İnvaziv derecesi, tipi, anestezi süresi, immobilizasyon

▶ **Hastaya ait faktörler**

- ▶ İleri yaş
- ▶ Geçirilmiş VTE
- ▶ Malignensi, obezite
- ▶ Kalıtsal ya da edinilmiş hiperkoagulabilite
- ▶ Medikal komorbiditeler (kardiyak hastalık, enfeksiyon, sepsis,...)

Caprini Risk Değerlendirme Modeli

Caprini JA. Am J Surg. 2010

1 Point	2 Points	3 Points	5 Points
Age 41-60 y	Age 61-74 y	Age ≥ 75 y	Stroke (< 1 mo)
Minor surgery	Arthroscopic surgery	History of VTE	Elective arthroplasty
BMI > 25 kg/m ²	Major open surgery (> 45 min)	Family history of VTE	Hip, pelvis, or leg fracture
Swollen legs	Laparoscopic surgery (> 45 min)	Factor V Leiden	Acute spinal cord injury (< 1 mo)
Varicose veins	Malignancy	Prothrombin 20210A	
Pregnancy or postpartum	Confined to bed (> 72 h)	Lupus anticoagulant	
History of unexplained or recurrent spontaneous abortion	Immobilizing plaster cast	Anticardiolipin antibodies	
Oral contraceptives or hormone replacement	Central venous access	Elevated serum homocysteine	
Sepsis (< 1 mo)		Heparin-induced thrombocytopenia	
Serious lung disease, including pneumonia (< 1 mo)		Other congenital or acquired thrombophilia	
Abnormal pulmonary function			
Acute myocardial infarction			
Congestive heart failure (< 1 mo)			
History of inflammatory bowel disease			
Medical patient at bed rest			

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C H E S T

1 Point

Age 41-60 y

Minor surgery

BMI > 25 kg/m²

Swollen legs

Varicose veins

Pregnancy or postpartum

History of unexplained or recurrent spontaneous abortion

Oral contraceptives or hormone replacement

Sepsis (< 1 mo)

Serious lung disease, including pneumonia (< 1 mo)

Abnormal pulmonary function

Acute myocardial infarction

Congestive heart failure (< 1 mo)

History of inflammatory bowel disease

Medical patient at bed rest

2 Points

Age 61-74 y

Arthroscopic surgery

Major open surgery (> 45 min)

Laparoscopic surgery (> 45 min)

Malignancy

Confined to bed (> 72 h)

Immobilizing plaster cast

Central venous access

3 Points

Age ≥ 75 y

History of VTE

Family history of VTE

Factor V Leiden

Prothrombin 20210A

Lupus anticoagulant

Anticardiolipin antibodies

Elevated serum homocysteine

Heparin-induced thrombocytopenia

Other congenital or acquired thrombophilia

5 Points

Stroke (< 1 mo)

Elective arthroplasty

Hip, pelvis, or leg fracture

Acute spinal cord injury (< 1 mo)

Kanser cerrahisi = Yüksek risk grubu

Caprini Skorlama Modeli

Deep Vein Thrombosis (DVT)

Prophylaxis Orders

(For use in Elective General Surgery Patients)

Thrombosis Risk Factor Assessment (Choose all that apply)

Each Risk Factor Represents 1 Point

- | | |
|---|--|
| ☐ Age 41-60 years | ☐ Acute myocardial infarction |
| ☐ Swollen legs (current) | ☐ Congestive heart failure (<1 month) |
| ☐ Varicose veins | ☐ Medical patient currently at bed rest |
| ☐ Obesity (BMI >25) | ☐ History of inflammatory bowel disease |
| ☐ Minor surgery planned | ☐ History of prior major surgery (<1 month) |
| ☐ Sepsis (<1 month) | ☐ Abnormal pulmonary function (COPD) |
| ☐ Serious Lung disease including pneumonia (<1 month) | |
| ☐ Oral contraceptives or hormone replacement therapy | |
| ☐ Pregnancy or postpartum (<1 month) | |
| ☐ History of unexplained stillborn infant, recurrent spontaneous abortion (≥ 3), premature birth with toxemia or growth-restricted infant | |
| ☐ Other risk factors _____ | |

Subtotal:

Each Risk Factor Represents 5 Points

- | | |
|--|---|
| ☐ Stroke (<1 month) | ☐ Multiple trauma (<1 month) |
| ☐ Elective major lower extremity arthroplasty | |
| ☐ Hip, pelvis or leg fracture (<1 month) | |
| ☐ Acute spinal cord injury (paralysis) (<1 month) | |

Subtotal:

BIRTHDATE _____

NAME _____

CPI No. _____

SEX M F VISIT No. _____

Each Risk Factor Represents 2 Points

- | | |
|---|--|
| ☐ Age 61-74 years | ☐ Central venous access |
| ☐ Arthroscopic surgery | ☐ Major surgery (>45 minutes) |
| ☐ Malignancy (present or previous) | |
| ☐ Laparoscopic surgery (>45 minutes) | |
| ☐ Patient confined to bed (>72 hours) | |
| ☐ Immobilizing plaster cast (<1 month) | |

Subtotal:

Each Risk Factor Represents 3 Points

- | | |
|---|--|
| ☐ Age 75 years or older | ☐ Family History of thrombosis* |
| ☐ History of DVT/PE | ☐ Positive Prothrombin 20210A |
| ☐ Positive Factor V Leiden | ☐ Positive Lupus anticoagulant |
| ☐ Elevated serum homocysteine | |
| ☐ Heparin-induced thrombocytopenia (HIT)
(Do not use heparin or any low molecular weight heparin) | |
| ☐ Elevated anticardiolipin antibodies | |
| ☐ Other congenital or acquired thrombophilia | |

Subtotal:

If yes: Type _____

* most frequently missed risk factor

TOTAL RISK FACTOR SCORE:

Bu model jinekolojik onkolojide uygulanabilir mi?



Validation of a venous thromboembolism risk assessment model in gynecologic oncology

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HIGHLIGHTS

- Risk assessment models can accurately predict patients at risk for venous thromboembolism.
- Risk assessment models can ensure appropriate prophylaxis to prevent venous thromboembolism in gynecologic oncology postoperative patients.

ARTICLE INFO

Article history:
Received 6 January 2014
Accepted 28 April 2014
Available online 4 May 2014

Keywords:
Deep venous thrombosis
Venous thromboembolism
Pulmonary embolism
Prophylaxis
Caprini
Gynecologic oncology

ABSTRACT

Objectives. Gynecologic oncology patients undergoing surgery are at an increased risk for venous thromboembolism (VTE). We attempted to validate a VTE risk assessment model in gynecologic oncology patients.

Methods. All gynecologic oncology patients who underwent a laparotomy for the diagnosis or suspicion of gynecologic malignancy from 2004 to 2010 were included. Demographic, surgical, and complication data were collected. VTE was based on the symptomatic diagnosis. Data for the Caprini risk assessment model (RAM) was used to score and stratify patients on their risk for VTE.

Results. 1123 gynecologic oncology patients were included within this study. Ovarian cancer was the most common diagnosis (39%) with a median age of 56.1. All patients received SCDs with 40% receiving double prophylaxis. The overall incidence of VTE was 3.3%, with lower extremity deep venous thrombosis (DVT) n = 17 and pulmonary embolism (PE) n = 20. Complication rates were similar in each group. Based on the Caprini scoring model 92% of patients scored in the "Highest Risk" category. The Caprini RAM accurately predicted all 37 VTEs, all of which scored in the "Highest Risk" category. The percentage of patients that received double prophylaxis increased with time from 12% in 2004 to 63% in 2010. Importantly, 25 of the 37 VTEs (68%) did not receive double prophylaxis.

Conclusions. The use of the Caprini RAM accurately predicted patients at the highest risk of experiencing VTE. Considering accurate identification of patients allows proper administration of double prophylaxis, we recommend the use of this scoring model preoperatively in patients undergoing surgery for gynecologic malignancies.

- ▶ Jinekolojik onkoloji cerrahisi vakalarının %92'si **yüksek risk grubunda**
- ▶ VTE insidansı: 37/1123 (%3.7)
 - ▶ %40 çift, %60 tek profilaksi
- ▶ VTE geçiren tüm hastalar, yüksek risk grubunda

Caprini risk modeli, jinekolojik onkolojide uygulanabilir

Risk grubu	Öneri
Çok düşük (Caprini skoru: 0-1)	Profilaksiye gerek yok
Düşük (Caprini skoru: 2)	Mekanik profilaksi (aralıklı pnömatik kompresyon)
Orta (Caprini skoru: 3-4)	Heparin (LMWH veya LDUH) veya mekanik profilaksi (aralıklı pnömatik kompresyon)
Yüksek (Caprini skoru: ≥ 5)	Heparin (LMWH veya LDUH) ve mekanik profilaksi (elastik çorap veya aralıklı pnömatik kompresyon)
Yüksek + kanser cerrahisi	Heparin ve mekanik profilaksi + 4 hafta LMWH
Yüksek + heparin kontrendike	Fondaparinux (anti FXa) veya aspirin (160 mg) Ve mekanik profilaksi

Ne zaman verilmeli ?

- ▶ Karşılaştırmalı prospektif çalışma yok
- ▶ Anesteziiden hemen önce verilmesi güvenilir
 - ▶ VTE olgularının %50'si, postop ilk 2 gün içerisinde
 - ▶ Trombüslerin %50'si, operasyon odasında başlamakta

Clarke-Pearson, AJOG, 1984

- ▶ Postoperatif 6-12. saatlerde verilmesi önerilir

Preoperatif dönemde verilebilir mi ?

Int J Gynecol Cancer. 2011 Aug;21(6):1131-4. doi: 10.1097/IGC.0b013e31821dc9f0.

Double prophylaxis for deep venous thrombosis in patients with gynecologic oncology who are undergoing laparotomy: does preoperative anticoagulation matter?

Whitworth JM¹, Schneider KE, Frederick PJ, Finan MA, Reed E, Fauci JM, Straughn JM Jr, Rocconi RP.

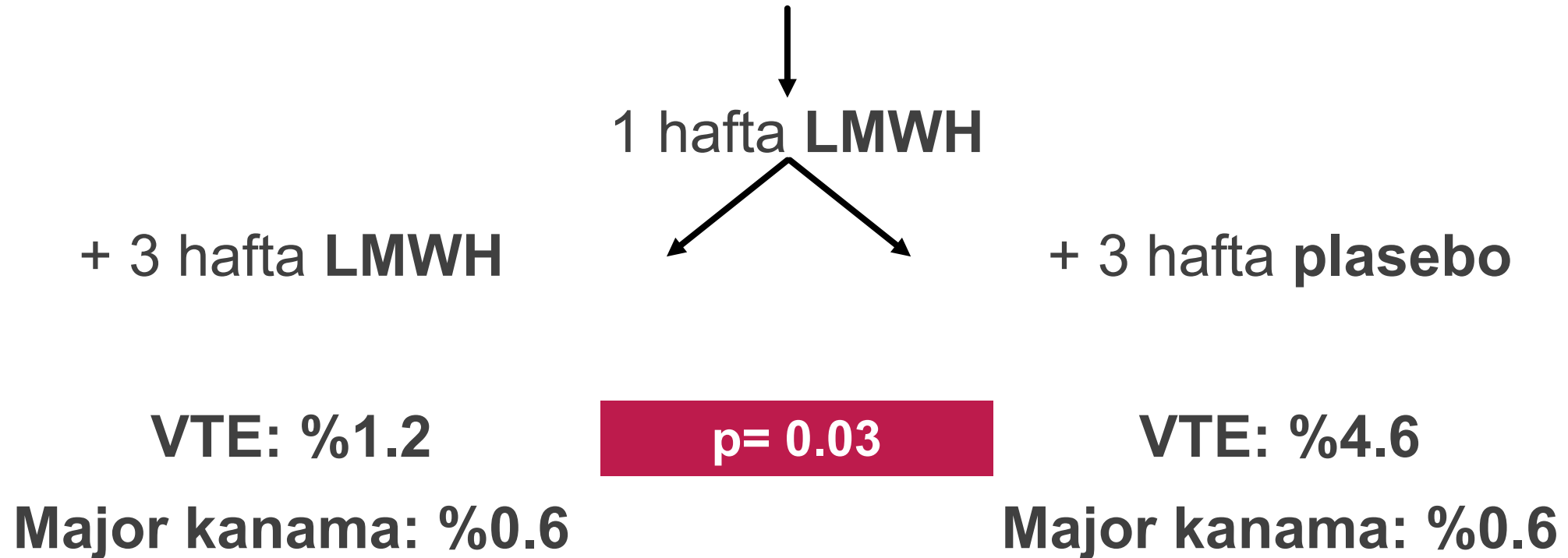
Gruplar arası tanı, BMI, yatış süresi benzer

	Preop LMWH (+)	Preop LMWH (-)	p
DVT	2/101 (%2)	11/138 (%7.9)	0.04
DVT ilişkili ölüm	0	2/138	<0.001
Postop Htc	30.2%	31.4%	0.42
Transfüzyon ihtiyacı	26	14	0.31

Extended prophylaxis with bemiparin for the prevention of venous thromboembolism after abdominal or pelvic surgery for cancer: the CANBESURE randomized study

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ON BEHALF OF THE CANBESURE STUDY GROUP¹

Gİ veya jinekolojik kanser operasyonları (n=625)



Kısa süreli (1 hafta) vs uzun süreli (4 hafta) profilaksi (LMWH ile)

	<u>1 hafta</u>	<u>4 hafta</u>
All-cause mortality Follow-up: 3 mo	54 per 1,000	60 per 1,000 (36-99)
Nonfatal symptomatic VTE Follow-up: 3 mo		
	Low-risk population	
	5 per 1,000	1 per 1,000 (0-4)
	Medium-risk population	
	8 per 1,000	2 per 1,000 (0-6)
	High-risk population	
	17 per 1,000	4 per 1,000 (1-14)
Major bleeding Follow-up: 3 mo	Low-risk population	
	12 per 1,000	13 per 1,000 (7-23)

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C H E S T

P H Y S I C I A N S[®]

2012



American Society of Clinical Oncology

2013

NCCN

National
Comprehensive
Cancer
Network[®]

2011

**Kanser cerrahisinde
4 haftalık profilaksi
önerilmektedir**

Taburculuk sonrası profilaksi için LMWH *vs* Aspirin veya Warfarin

A M E R I C A N C O L L E G E O F



C H E S T

s

P H Y S I C I A N S[®]

Uzatılmış profilakside LMWH önerilmektedir

LMWH Dozu

	Preop	Postop
Dalteparin	2500 U, 2-4 saat önce veya 5000 U, 10-12 saat önce	5000 U, postop 10-12. saatte + 5000 U, 1x1
Enoxaparin	20 mg, 2-4 saat önce veya 40 mg, 10-12 saat önce	40 mg, postop 10-12. saatte + 40 mg, 1x1
Tinzaparin		175 U/kg, 1x1

Incidence of Venous Thromboembolism by Type of Gynecologic Malignancy and Surgical Modality in the National Surgical Quality Improvement Program

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Mark Morgan, MD,* Robert Giuntoli, MD,* Robert Burger, MD,* Sarah Kim, MD, MSCE,*
and Emily Ko, MD, MSCR*

Background: Women with gynecologic cancer are at higher risk of venous thromboembolism (VTE) due to malignancy, pelvic surgery, increased age, and frequently comorbidities. The rate of VTE among different gynecologic cancers and relative to benign gynecologic surgeries has not been reported in a nationally representative cohort.

Methods: Using the American College of Surgeons National Surgical Quality Improvement Program database, we analyzed the incidence of VTE among gynecologic cancer patients who underwent surgery between 2012 and 2016.

2012-2016 arası ABD Ulusal Data

Results: Of all gynecologic surgeries (n = 104,368), 11,427 were performed for malignancy: 2.7% (n = 2800) for ovarian cancer, 6.8% (n = 7114) for uterine cancer, 1.0% (n = 1026) for cervical cancer, and 0.5% (n = 487) for vulvar cancer. 202 (1.8%) patients experienced a VTE. Ovarian cancer had a deep venous thrombosis and pulmonary embolism rates of 1.6% and 1.5% compared with uterine cancer, 0.8% and 0.8%, respectively. Ovarian cancer patients were 1.8 (95% confidence interval [CI], 1.19–2.65) times more likely to have a deep venous thrombosis and 1.7 (95% CI, 1.11–2.51) times more likely to have a pulmonary embolism than patients with uterine cancer. Compared with all gynecologic cancer surgeries, ovarian cancer patients were 1.5 times more likely to have a VTE (95% CI, 1.10–2.16). Patients undergoing minimally invasive surgery were 64% less likely to have a VTE regardless of malignancy site; however, if they had disseminated disease, they remained at higher risk of VTE (odds ratio, 5.96; P = 0.027).

Conclusions: Of gynecologic cancer surgeries, ovarian cancer patients had the highest rate of VTE. Venous thromboembolism rates were lower in those who had minimally invasive surgery but remained higher in those with disseminated disease.

Key Words: Gynecologic oncology, NSQIP, Venous thromboembolism

Received October 25, 2016, and in revised form December 2, 2016.

Accepted for publication November 9, 2016.

(Int J Gynecol Cancer 2017;27: 581–587)

- ▶ Jinekolojik cerrahi: n=104.368 hasta
- ▶ Malignensi: n=11.400

- ▶ Over kanseri, n=2800
- ▶ Endometrium kanseri, n=7100
- ▶ Serviks kanseri, n=1020
- ▶ Vulva kanseri, n=200

- ▶ Tüm hastalar içerisinde DVT: %0.53
- ▶ Malign grupta DVT: %1.8

- ▶ Profilaksi ile ilgili bilgi yok (Kılavuzlara uygun kullanılmış olması muhtemel)

	OR	P	95% CI	
Age	1.02	0.012	1.004	1.031
Race				
White	Ref*	—	—	—
Black	1.08	0.77	0.644	1.811
Other	0.98	0.927	0.589	1.620
Unknown	0.74	0.407	0.358	1.517
BMI	1.00	0.669	0.986	1.022
Cancer type				
Uterine	Reference	—	—	—
Ovarian	1.74	0.002	1.230	2.450
Cervical	1.11	0.733	0.611	2.014
Other	0.69	0.401	0.287	1.647
Charlson Comorbidity Index				
0	Reference	—	—	—
1	0.94	0.709	0.659	1.329
≥2	1.05	0.837	0.687	1.590
Major complications				
0	Reference	—	—	—
1	4.10	<0.001	2.694	6.254
>2	6.21	<0.001	3.872	9.958
Operative time (h)	1.19	<0.001	1.110	1.287
Disseminated disease	1.55	0.037	1.027	2.339
Upper abdominal surgery	1.25	0.51	0.649	2.388
Lymph node dissection	1.19	0.24	0.888	1.604

	OR	P	95% CI	
Age	1.02	0.013	1.003	1.030
Race				
White	Ref*	—	—	—
Black	0.98	0.938	0.584	1.644
Other	0.92	0.731	0.552	1.516
Unknown	0.65	0.247	0.317	1.345
BMI	1.00	0.889	0.984	1.019
Cancer type				
Uterine	Reference	—	—	—
Ovarian	1.20	0.308	0.845	1.707
Cervical	0.91	0.761	0.498	1.666
Other	0.42	0.059	0.176	1.099
Charlson Comorbidity Index				
0	Reference	—	—	—
1	0.93	0.703	0.658	1.326
≥2	1.01	0.957	0.665	1.538
Major complications				
0	Reference	—	—	—
1	3.77	<0.0001	2.485	5.733
≥2	5.41	<0.0001	3.368	8.678
Operative time (h)	1.22	<0.0001	1.002	1.004
Disseminated disease	1.38	0.116	0.924	2.049
MIS	0.34	<0.0001	0.222	0.518

Minimal invaziv cerrahide VTE riski düşük

Laparoskopik jinekolojik kanser

Kılavuzlarda ve ERAS programında ayırım yapılmamıştır

Laparoskopik onkolojik cerrahi, daha düşük risk sınıfına alınabilir mi?

	Open Abdominal Surgery				MIS			
	OR	<i>P</i>	95% CI		OR	<i>P</i>	95% CI	
Age	1.01	0.056	1.000	1.028	1.04	0.055	0.999	1.074
Race								
White	Ref*	—	—	—	Reference	—	—	—
Black	0.93	0.804	0.526	1.645	1.28	0.7	0.364	4.504
Other	0.92	0.771	0.538	1.583	1.03	0.971	0.233	4.525
Unknown	0.64	0.257	0.294	1.386	0.99	0.989	0.130	7.443
BMI	0.99	0.349	0.971	1.011	1.05	0.005	1.015	1.084
Cancer type								
Uterine	Reference	—	—	—	Reference	—	—	—
Ovarian	1.16	0.427	0.804	1.673	0.80	0.836	0.098	6.550
Cervical	0.82	0.562	0.428	1.587	1.31	0.734	0.273	6.316
Other	0.44	0.071	0.184	1.072	Omitted	—	—	—
Charlson Comorbidity Index								
0	Reference	—	—	—	Reference	—	—	—
1	0.95	0.791	0.651	1.387	0.89	0.817	0.338	2.352
≥2	0.96	0.848	0.601	1.520	1.25	0.677	0.440	3.536
Major complications								
0	Reference	—	—	—	Reference	—	—	—
1	3.56	<0.001	2.263	5.593	6.22	0.002	1.973	19.639
≥2	5.86	<0.001	3.594	9.558	3.24	0.263	0.415	25.262
Operative time (h)	1.20	<0.001	1.109	1.293	1.37	0.006	1.093	1.726
Disseminated disease	1.30	0.217	0.857	1.971	5.96	0.027	1.224	28.997
Upper abdominal surgery	1.19	0.601	0.621	2.276	Omitted	—	—	—
Lymph node dissection	1.31	0.098	0.951	1.806	1.09	0.834	0.503	2.346

ERAS Önerileri

Gynecologic Oncology 140 (2016) 313–322

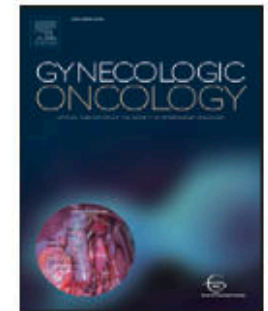


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Gynecologic Oncology

journal homepage: www.elsevier.com/locate/ygyno



Guidelines for pre- and intra-operative care in gynecologic/oncology surgery: Enhanced Recovery After Surgery (ERAS®) Society recommendations — Part I



Nelson G.^{a,*}, Altman A.D.^b, Nick A.^c, Meyer L.A.^c, Ramirez P.T.^c, Achdari C.^d, Antrobus J.^e, Huang J.^f, Scott M.^{g,h}, Wijk L.ⁱ, Acheson N.^j, Ljungqvist O.^k, Dowdy S.C.^l

Item	Recommendation	Evidence level	Recommendation grade
Preoperative information education and counseling	Patients should routinely receive dedicated preoperative counseling	Low	Strong
Preoperative optimization	Smoking and alcohol consumption (alcohol abusers) should be stopped four weeks before surgery	Smoking: High	Strong
	Anemia should be actively identified, investigated, and corrected preoperatively	Alcohol: Moderate	Strong
Preoperative bowel preparation	Mechanical bowel preparation should not be used routinely even when bowel resection is planned	High	Strong
		Moderate	Strong
Preoperative fasting and carbohydrate treatment	Clear fluids should be allowed up to 2 h and solids up to 6 h hours prior to induction of anesthesia	Solids/fluids: High	Strong
	Carbohydrate loading reduces postoperative insulin resistance and should be used routinely	Carb loading: Mod (outcome insulin resistance)	Strong

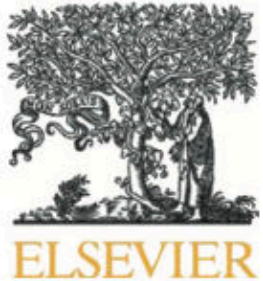
VTE için yüksek riskli hastalar, preop dönemde başlanacak şekilde mekanik profilaksi + LMWH veya heparin ile profilaksi almalıdır

Kanıt düzeyi: Orta-Yüksek

Preparation	administered routinely within 60 min before skin incision; additional doses should be given during prolonged operations, severe blood loss and obese patients		
	Hair clipping is preferred if hair removal is mandatory	High	Strong
	Chlorhexidine–alcohol is preferred to aqueous povidone-iodine solution for skin cleansing	High	Strong
Standard anesthetic protocol	Short acting anesthetic agents should be used to allow rapid awakening	Low	Strong
	A ventilation strategy using tidal volumes of 5–7 ml/kg with a PEEP of 4–6 cm H ₂ O should be employed to reduce postoperative pulmonary complications	Moderate	Strong
Postoperative nausea and vomiting	A multimodal approach to PONV with >2 antiemetic agents should be used for patients undergoing gynecologic procedures	Moderate	Strong
Minimally invasive surgery (MIS)	MIS is recommended for appropriate patients when expertise and resources are available	Morbidity: Low Recovery: High	Strong
Nasogastric intubation	Routine nasogastric intubation should be avoided Nasogastric tubes inserted during surgery should be removed before reversal of anesthesia	High	Strong
Preventing intraoperative hypothermia	Maintenance of normothermia with suitable active warming devices should be used routinely	High	Strong
Perioperative fluid management	Very restrictive or liberal fluid regimes should be avoided in favor of euvolemia	High	Strong
	In major open surgery and for high risk patients where there is large blood loss (>7 ml/kg) or a SIRS response the use of advanced hemodynamic monitoring to facilitate individualized fluid therapy and optimize oxygen delivery during the perioperative period is recommended	Moderate	Strong

ERAS Önerileri

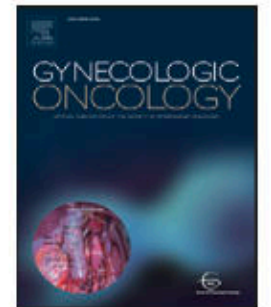
Gynecologic Oncology 140 (2016) 323–332



Contents lists available at ScienceDirect

Gynecologic Oncology

journal homepage: www.elsevier.com/locate/ygyno



Society position statements/white papers

Guidelines for postoperative care in gynecologic/oncology surgery: Enhanced Recovery After Surgery (ERAS®) Society recommendations — Part II



G. Nelson ^{a,*}, A.D. Altman ^b, A. Nick ^c, L.A. Meyer ^c, P.T. Ramirez ^c, C. Achdari ^d, J. Antrobus ^e, J. Huang ^f, M. Scott ^{g,h},
L. Wijk ⁱ, N. Acheson ^j, O. Ljungqvist ^k, S.C. Dowdy ^l

**Postoperatif dönemde,
aralıklı pnömatik kompresyon çorabı giyilmelidir**
**Abdominal/pelvik malignensi için yapılan laparotomi sonrası uzatılmış
profilaksi (28 gün) verilmelidir**
Kanıt düzeyi: Yüksek

Postoperative analgesia	infusions and regular blood glucose monitoring to avoid the risk of hypoglycemia A multimodal approach to analgesia should be adopted including use of NSAIDS/acetaminophen, gabapentin and dexamethasone (unless contraindications exist)	Multimodal: high NSAIDS/aceta: high Gabapentin: moderate Dexamethasone: low	Strong
Vaginal hysterectomy	Paracervical nerve block or intrathecal morphine can be used to reduce pain and opioid consumption	Low	Weak
Open general gynecologic surgery	Spinal anesthesia with intrathecal morphine is recommended	Moderate	Strong
	Alternatively, thoracic epidural analgesia (TEA) with low concentration local anesthetic solutions with the addition of opiates for 24-48 h can be considered	High	Strong
	Truncal nerve blocks (TAP or ilioinguinal) can be recommended where patients have undergone general anesthesia without neuraxial blockade	Moderate	Strong
	Continuous wound infiltration (CWI) of local anesthetic can be considered	Moderate	Strong
Major oncologic surgery	TEA may be considered but patients frequently require additional IV opioids in addition to TEA to achieve adequate analgesia	Low	Weak
Laparoscopic gynecologic/oncology surgery	Lack of evidence makes it difficult to recommend one analgesic intervention over another, however a multimodal approach should be employed	Low	Weak
Peritoneal drainage	Peritoneal drainage is not recommended routinely in gynecologic/oncology surgery including for patients undergoing lymphadenectomy or bowel surgery	Moderate	Strong
Urinary drainage	Urinary catheters should be used for postoperative bladder drainage for a short period preferably <24 h postop	Low	Strong
Early mobilization	Patients should be encouraged to mobilize within 24 h of surgery	Low	Strong

Benign jinekolojide

Ek risk faktörü yoksa

Laparoskopik histerektomi
Benign laparoskopik işlem
Ürojinekolojik cerrahi



Tek başına
MEKANİK PROFİLAKSİ

Jinekolojik onkolojide

❑ Mekanik profilaksi



❑ Preop ve postop farmakolojik profilaksi



❑ Uzatılmış profilaksi



CHEST

Supplement

ANTITHROMBOTIC THERAPY AND PREVENTION OF THROMBOSIS, 9TH ED: ACCP GUIDELINES

Prevention of VTE in Nonorthopedic Surgical Patients

Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines

Michael K. Gould, MD, FCCP; David A. Garcia, MD; Sherry M. Wren, MD; Paul J. Karanicolas, MD, PhD; Juan I. Arcelus, MD, PhD; John A. Heit, MD; and Charles M. Samama, MD, PhD, FCCP

VENOUS THROMBOEMBOLISM
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May 2013
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VOLUME 31 • NUMBER 17 • JUNE 10 2013

JOURNAL OF CLINICAL ONCOLOGY

ASCO SPECIAL ARTICLE

Venous Thromboembolism Prophylaxis and Treatment in Patients With Cancer: American Society of Clinical Oncology Clinical Practice Guideline Update

Gary H. Lyman, Nicole M. Kuderer, and Jeffrey M. Clarke, Duke University and Duke Cancer Institute, Durham; Nigel S. Key, Lindeberger Comprehensive Cancer Center, University of North Carolina, Chapel

Gary H. Lyman, Alok A. Khorana, Nicole M. Kuderer, Agnes Y. Lee, Juan Ignacio Arcelus, Edward P. Balaban, Jeffrey M. Clarke, Christopher R. Flowers, Charles W. Francis, Leigh E. Gates, Ajay K. Kakkar, Nigel S. Key, Mark N. Levine, Howard A. Liebman, Margaret A. Tempero, Sandra L. Wong, Ann Alois Prestrud, and Anna Falanga



CTF Jinekolojik Onkoloji Deneyimi

Preoperatif

8-12 saat önce
LMWH

Postoperatif

Perop
elastik çorap
+
6. saatte LMWH

Uzatılmış

28. güne dek
Elastik çorap
+
LMWH



CTF Jinekolojik Onkoloji Deneyimi

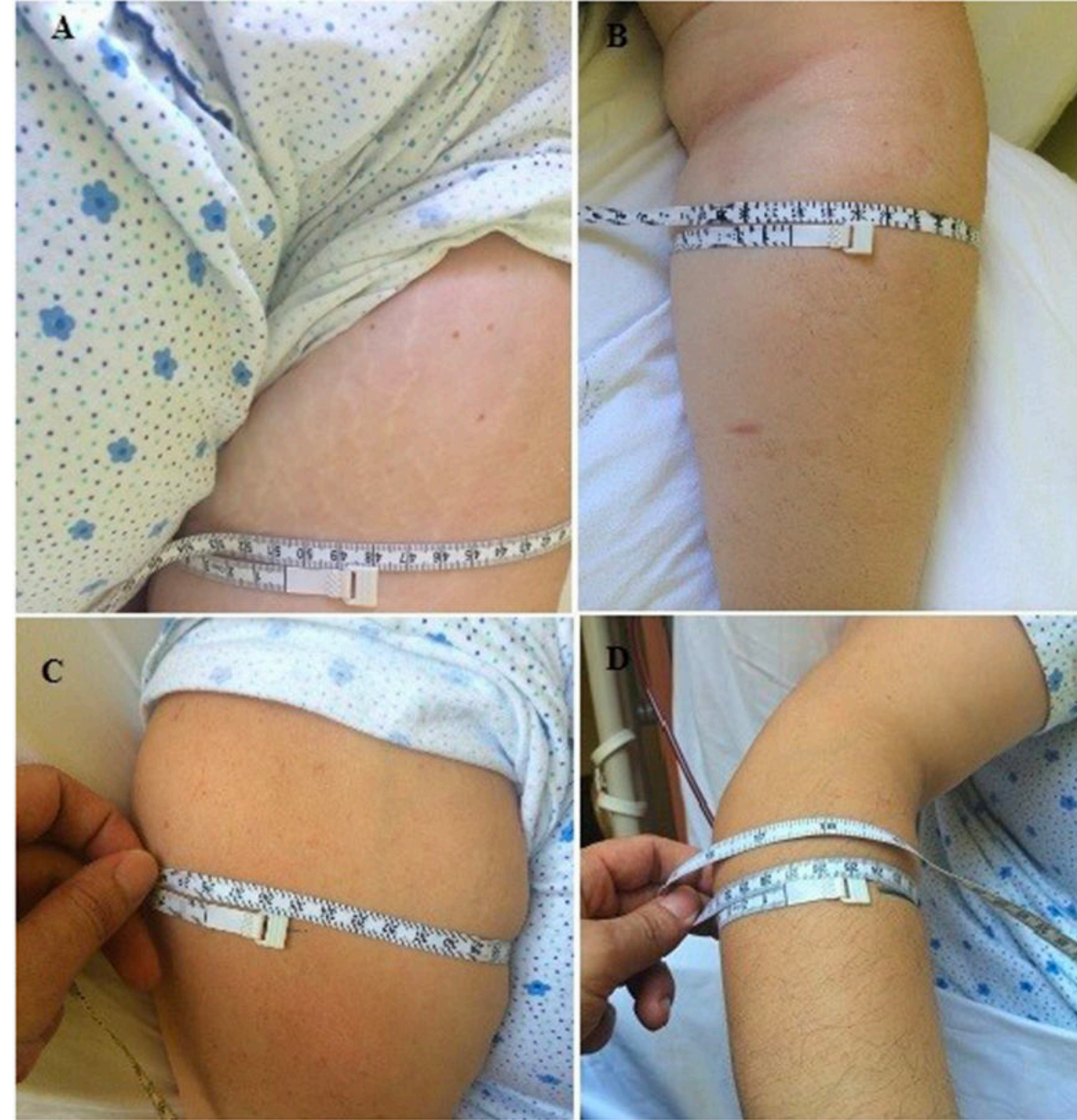
- ▶ **Ocak 2010 – Eylül 2017 arası opere olan malign hasta grubu**
- ▶ **n= 1982**
- ▶ **DVT gelişen hasta sayısı: 24**
 - ▶ **Açık cerrahi: 23**
 - ▶ **Laparoskopi: 1**
- ▶ **DVT oranı: 1.2 %**



CTF Jinekolojik Onkoloji Deneyimi

	DVT gelişen 24 hasta
Yaş (yıl) , ortalama (min-maks)	57.8 (28-85)
BMI (kg/m²) , ortalama (min-maks)	32.5 (20.5-44.5)
Komorbiditye <i>DM, dispne, KOAH, KVH, HT, SVO</i>	%75
Primer malignite , n	Vulva: 2 Serviks: 1 Endometrium: 6 Over: 15
Operasyon süresi (dk) , ortalama(min-maks)	205 (60-420)

Üst ekstremiteye de dikkat edilmeli



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JOURNAL OF CLINICAL ONCOLOGY

ASCO SPECIAL ARTICLE

“The appropriate use of thromboprophylaxis was the most highly rated of 79 safety practices based on impact and effectiveness and was, therefore, considered to be the number one ranked patient safety practice for hospitals.”¹⁰

Jeffrey M. Clarke, Duke University and
Duke Cancer Institute, Durham; Nigel S.
Key, Lineberger Comprehensive Cancer
Center, University of North Carolina, Chapel

*Gary H. Lyman, Alok A. Khorana, Nicole M. Kuderer, Agnes Y. Lee, Juan Ignacio Arcelus, Edward P. Balaban,
Jeffrey M. Clarke, Christopher R. Flowers, Charles W. Francis, Leigh E. Gates, Ajay K. Kakkar, Nigel S. Key, Mark N. Levine,
Howard A. Liebman, Margaret A. Tempero, Sandra L. Wong, Ann Alexis Prestrud, and Anna Falanga*

and Charles M. Samama, MD, PhD, FCCP

Performance Measures

CONSENSUS
REPORT

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Sonuç

- ▶ Benign jinekolojik operasyonlar için **Caprini risk skorlaması** kullanılabilir
- ▶ Kanser cerrahisi öncesi yatmış hastalara profilaksi **8-12 saat önce** başlanmalıdır
- ▶ Kanser cerrahisi sonrası **28 güne** uzatılmış **dual tromboprofilaksi** verilmelidir

Teşekkürler