پیشگفتار

با همکاری حدود 600 نفر از متخصصین و صاحب‌نظرهای ترومبوآمبولی در ارتوپدی از بیش از 68کشور جهان و مشارکت 135 انجمن و جامعه ارتوپدی دنیا و صرف زمان بیش از یکسال، گایدلاین جامع و به روز ترومبو آمبولی در جراحی‌های ارتوپدی تهیه گردید.

این گایدلاین بیش از هر دستورالعمل دیگری که در حال حاضر مورد استفاده قرار می‌گیرد، متمرکز بر نیازها و سوالاتی است که ذهن همکاران جراح ارتوپدی را به خود مشغول می‌کند. گایدلاین‌های شناخته شده مثل گاید لاین انجمن متخصصین قفسه سینه آمریکا، در کنار سایر بخش‌های پزشکی دارای توصیه‌هایی برای رشته تخصصی ارتوپدی هستند و به صورت اختصاصی با این هدف تهیه نشده‌اند. بخش بیشتری از این گایدلاین‌ها نیز توصیه‌های عمومی دارند و شامل برخی عمل‌ها و فیلدهای جدیدتر دنیای گسترده ارتوپدی نیستند.

مفتخرم اعلام کنم به تازگی، ژورنال پزشکی نیوانگلند (NEJM) در یک لیست محدود از بین تمام گایدلاین‌ها و دستورالعمل‌های بالینی تهیه شده در تمام حیطه‌های پزشکی، گایدلاین ICM-VTE فیلادلفیا را به عنوان یکی از موثرترین دستورالعمل‌ها در طبابت بالینی سال 2022 معرفی کرده است.

ترجمه فارسی این گایدلاین به عهده اعضای ایرانی اجماع عمومیفیلادلفیا گذاشته شد و با ویراستاری آقای دکتر علی پارسا دانشیار دانشگاه علوم پزشکی مشهد به انجام رسیده است.

مطمئن هستم که این اثر با همکاری انجمن جراحان ارتوپدی ایران که از انجمن‌های فعال در تهیه این گایدلاین بوده است، به بهبود کنترل عوارض ترومبوآمبولیک در بیماران ارتوپدی کشورمان منجر خواهد شد.

ژانویه 2023

دکتر جواد پرویزی
سرپرست نویسندگان گایدلاین ICM-VTE
استاد جراحی ارتوپدی دانشگاه توماس جفرسون - موسسه راتمن فیلادلفیا - آمریکا

مقدمه ویراستار

ترومبوآمبولی وریدی عارضه خطیر بسیاری از اعمال جراحی از جمله عمده جراحی‌های رشته ارتوپدی می‌باشد. به جهت خطیر بودن عارضه و امکان مرگ ومیر، همواره چگونگی پیشگیری از آن بحث برانگیز بوده است.

بیماران طیف متنوعی از ریسک فاکتورهای ترومبوآمبولی وریدی دارند و نحوه راه اندازی و مدت زمان بی‌حرکتی فرد در جراحی‌های ارتوپدی بسیار متغیر است که باعث تفاوت بسیار زیاد در شانس بروز حوادث ترومبوآمبولیک در بیماران ارتوپدی می‌شود.

گایدلاین‌های بسیار معتبری مثل گایدلاین "انجمن پزشکان قفسه سینه آمریکا" و سایر انجمن‌های تخصصی قلب وعروق در آمریکا و اروپا اگرچه مکررا مورد استناد در ارتوپدی قرار می‌گیرند ولی رویکرد تخصصی به عمل‌های جراحی ارتوپدی ندارند. توصیه‌های آنها بیشتر معطوف به جراحی تعویض مفاصل هیپ و زانو و تاحدودی تروماهای ماژور ارتوپدی است. بخش زیادی اعمال جراحی ارتوپدی به خصوص جراحی‌های آرتروسکوپی و نحوه پیشگیری از ترومبوآمبولی در آن‌ها در این گایدلاینها و حتی گایدلاین" انجمن جراحان ارتوپدی آمریکا" مغفول مانده است.

با همت و ابتکار استاد ارجمند جناب آقای دکتر پرویزی، اجماع عمومیبین‌المللی ترومبوآمبولی با تکیه بر تجربه‌های موفق قبلی ایشان در اجرای اجماع عمومیعفونت‌های اسکلتی-عضلانی با گردآوردن بیش از 600 متخصص از کشورهای مختلف و همکاری بیش از 135 انجمن و موسسه ارتوپدی در سال 2022 به نتیجه رسید. در یک دوره بیش از یکساله تمام شواهد موجود درپایگاه‌های استنادی داده‌ها دراین موضوع توسط کمیته اصلی اجماع عمومیبررسی گردید تا حدود 200 سوال برای رای اعضای کانسنسوی آماده شود.

ترجمه فارسی بخش‌های عمده این گایدلاین ارزشمند که شامل سوالات در حیطه‌های مختلف فوق تخصصی ارتوپدی می‌باشد به همراه پاسخ و توصیه‌های مربوطه و همچنین وضعیت اجماع عمومیاعضای اجماع عمومیدر مورد هر سوال، در این ترجمه آورده شده است.

از همراهی اساتید گرامی ایرانی حاضر در اجماع عمومیفیلادلفیا که زحمت ترجمه بخش‌های مختلف را داشته‌اند و همچنین همکاری هیات مدیره محترم انجمن جراحان ارتوپدی ایران به خصوص استاد رازی (ریاست محترم انجمن) و استاد ابراهیم زاده (مسوول کمیته گاید لاین انجمن) تشکر و قدردانی می‌کنم.

از همکاران بزرگوارم، اساتید و جراحان ارتوپدی بابت کاستی‌های احتمالی ترجمه این اثر عذرخواهم و امیدوارم که گایدلاین ترومبوآمبول به بهبود سطح مراقبت بیماران ارتوپدی در کشور کمک کند.

دکتر علی پارسا
فوق تخصص جراحی هیپ
انستیتو هیپ آمریکا – شیکاگو- ایلینوی
دانشیار دانشگاه علوم پزشکی مشهد

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دکتر نجفی
دکتر پارسا
دکتر مرتضوی
دکتر قضاوی

جنرال

1. آیا بیمارانی هستند که در معرض خطر بیشتری برای ابتلا به VTE باشند؟

پاسخ/توصیه: جمعیت بخصوصی از بیماران در معرض خطر بالاتری برای ابتلا به VTEهستند.

قدرت توصیه: محدود

رای نمایندگان: موافق (94.61٪) مخالف (2.93٪) ممتنع (2.44٪) - اجماع عمومیقوی

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2. آیا فاکتورهای مستعد کننده ژنتیکی برای ابتلا به VTE وجود دارد ؟

پاسخ/توصیه: ۵ حالت کلاسیک افزایش انعقادپذیری وجود دارد که دارای عامل ژنتیکی مستعد کننده برای VTE می‌باشند.

درصد بزرگی از ریسک فاکتورهای ارثی VTE تشخیص داده نشده‌اند و تعداد زیادی جایگاه ژنی مرتبط با بروز VTE در حالشناسایی هستند.

قدرت توصیه: قوی

رای نمایندگان: موافق (98.60٪) مخالف (0.47٪) ممتنع (0.93٪) - اجماع عمومیقوی

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3. آیا ارتباطی بین سن و بروز VTE در بیمارانی که تحت پروسیجر های ارتوپدی قرار می‌گیرند وجود دارد؟

پاسخ/توصیه: افزایش سن با افزایش ریسک بروز VTEدر بیمارانی که تحت پروسیجر های ارتوپدی قرار میگیرند مرتبط است.

قدرت توصیه: قوی

رای نمایندگان: موافق (99.53٪)، مخالف (0.47٪)، ممتنع (۰.۰۰٪) - اجماع عمومیقوی

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4. آیا ریسک بروز VTE متعاقب پروسیجرهای ارتوپدی ارتباطی با قومیت یا نژاد دارد؟

پاسخ/توصیه: در حال حاضر شواهد برای اینکه بر اساس قومیت یا نژاد، پروفیلاکسی جهت VTE تغییر کند، ناکافی است.

قدرت توصیه: محدود

رای نمایندگان: موافق (99.53٪)، مخالف (2.44٪)، ممتنع (2.44٪) - اجماع عمومیقوی

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5. آیا ارتباط قوی بین BMI و VTE وجود دارد؟

پاسخ/توصیه: شواهد گسترده ارتباط قطعی بین بروز غیرقابل پیش‌بینی VTE و افزایش BMIرا تایید می‌کنند.

اگرچه شواهدی که BMI را به VTE بعد عمل جراحی مرتبط کند ابهام دارد.

قدرت توصیه: متوسط

رای نمایندگان: موافق (95.15٪)، مخالف (3.88٪)، ممتنع (0.97٪) - اجماع عمومیقوی

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6. آیا سابقه VTE قبلی روی میزان بروز VTE در بیمارانی که قرار است تحت عمل جراحی ارتوپدی قرار بگیرند تاثیرگذار است؟

پاسخ/ توصیه: بیماران با سابقه VTE شامل DVT و PEدر ریسک بالاتری برای ابتلا به VTE بعد عمل جراحی ارتوپدی هستند.

قدرت توصیه: قوی

رای نمایندگان: موافق (99.51٪)، مخالف (۰٫۰۰٪)، ممتنع (0.49٪) - اجماع عمومیقوی

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7. آیا نوع DVT در مقایسه با PE یا زمانِ دور در مقایسه با نزدیک VTE قبلی در ریسک بروز VTEبعد عمل جراحی ارتوپدی تاثیر دارد؟

پاسخ/توصیه: اینکه بیمارانی که سابقه VTE دارند در ریسک بالاتری برای VTE بعد عمل هستند فرض معقولی بنظر میرسد درحالی که مقالات با کیفیتِ بالایِ اندکی وجود دارد که به تاثیر نوع و زمان VTE قبلی بر ریسک بروز VTE در آینده اشاره کرده باشند.

قدرت توصیه: محدود

رای نمایندگان: موافق (93.60٪)، مخالف (3.45٪)، ممتنع (2.96٪) - اجماع عمومیقوی

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8. آیا بیمارانی که با تشخیص عفونت زمینه‌ای موضعی یا سیستمیک تحت عمل جراحی ارتوپدی قرار می‌گیرند ریسک بالاتری برای VTE بعدی دارند؟

پاسخ/توصیه: بیمارانی که عفونت سیستمیک دارند و تحت عمل ارتوپدی قرار میگیرند ریسک بالاتری برای VTE دارند. اینارتباط برای عفونت‌های موضعی اثبات نشده است.

قدرت توصیه : متوسط

رای نمایندگان: موافق (95.07٪)، مخالف (2.46٪)، ممتنع (2.46٪) - اجماع عمومیقوی

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9. آیا وجود واریس و/یا ترومبوز سطحی انتهای اندام تحتانی سبب افزایش ریسک بروز VTE در بیمارانی که تحت پروسیجر هایارتوپدی قرار می‌گیرند می‌شود؟

پاسخ/توصیه: وجود وریدهای واریسی ریسک بروز VTEرا به میزان ۳ برابر در بیمارانی که تحت عمل جراحی ارتوپدیماژور قرار میگیرند ، بالا میبرد. (قوی)
سابقه ترومبوز ورید سطحی SVT سبب افزایش ریسک VTEبعد عمل جراحی به میزان ۵ تا ۱۰ برابر در بیمارانی که تحت عمل جراحی اندام تحتانی قرار می‌گیرند، میشود. (محدود)
ترومبوز ورید سطحی SVT حاد سبب افزایش ریسک VTE می‌شود و عمل‌های جراحی الکتیو ارتوپدی در صورت امکان بایدحداقل ۳ ماه به تعویق بیافتد.
قدرت توصیه: محدود
رای نمایندگان: موافق (95.10٪) مخالف (0.98%) ممتنع (3.92٪) - اجماع عمومیقوی

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10. (A) آیا داروهای OCP سبب افزایش ریسک VTE می‌شود؟
(B) اگر چنین است آیا باید قبل عمل مصرف آن‌ها را قطع کرد؟

پاسخ/توصیه: بروز VTE بعد عمل جراحی در زنانی که OCP مصرف می‌کنند در مقایسه با زنانی که مصرف نمی‌کنند افزایش پیدا می‌کند. قطع مصرف در همه مصرف کنندگان توصیه نمی‌شود. اگرچه مصرف OCPهنگام ارزیابی ریسک بیماران و پروسیجرها و ایجاد یک مبنا جهت تصمیم‌گیری برای پروفیلاکسی ترومبوز، باید در نظر باشد.

قدرت توصیه A: قوی ؛ Bمحدود

رای نمایندگان: موافق (94.66٪)، مخالف (1.49٪)، ممتنع (3.40٪) - اجماع عمومیقوی

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11. آیا هورمون تراپی خوراکی جهت درمان کانسر سبب افزایش ریسک VTE بعد عمل جراحی در بیمارانی که تحت پروسیجرهای ارتوپدی قرار می‌گیرند می‌شود؟ اگر چنین است آیا باید مصرف آن‌ها را قبل عمل قطع کرد؟

پاسخ/توصیه: هورمون‌تراپی در درمان کانسر مثل تاموکسیفن سبب افزایش ریسک VTE بعد عمل جراحی در بیمارانی که تحت پروسیجرهای ارتوپدی قرار می‌گیرند می‌شود. توصیه می‌شود حداقل به مدت ۷ روز قبل از عمل جراحی مصرف آنها تعلیق شود.

یک اپروچ شخصی‌سازی شده بر اساس ریسک فاکتورها و شرایط بالینی فرد لازم است (شامل نوع کنسر فرد و غیره) قدرت توصیه: ضعیف

رای نمایندگان: موافق (92.08٪)، مخالف (2.97٪)، ممتنع (4.95٪) - اجماع عمومیقوی

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12. آیا بیمارانی که قبل عمل جراحی مسافرت هوایی یا رانندگی طولانی مدت دارند در ریسک افزایش ابتلا به VTEقرار دارند؟ اگر چنین است بهترین فاصله زمانی بین مسافرت و جراحی متعاقب آن چقدر باید باشد؟

پاسخ/توصیه: تایید شده است که مسافرت‌های هوایی بخصوص مسافرت های مسافت طولانی ریسک فاکتور ماژور جهت بروز VTE می‌باشند. افراد با ریسک فاکتورهای قبلی جهت VTE در ریسک بالاتری برای بروز VTE هستند.

در مورد بررسی تاثیر مسافرت با مسافت طولانی قبل عمل جراحی بر میزان بروز VTE بعد عمل جراحی کمبود مطالعات مواجه هستیم. بطور مشابه درحالیکه این مساله که از مسافرت هوایی در فاصله زمانی کوتاه بعد از عمل جراحی بدلیل افزایش ریسک VTE باید اجتناب شود، بطور شایعی پذیرفته شده است؛ اما شواهد محدودی برای تایید این مطلب وجود دارد.

بدلیل محدودیت مطالعات در اتخاذ بهترین روش جهت کاهش ریسک VTE در قبل و بعد عمل جراحی، در بیمارانی که مسافرت با مسافت طولانی دارند انتخاب پروفیلاکسی مناسب فردی شده است و خطرات و منافع انتخاب‌های دارویی و غیردارویی برای هر بیمار در نظر گرفته شود.

قدرت توصیه: محدود

رای نمایندگان: موافق (96.10٪)، مخالف (1.46٪)، ممتنع (2.44٪) - اجماع عمومیقوی

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13. آیا تمام پروسیجرهای ارتوپدی ریسک یکسانی جهت DVT دارند ؟

پاسخ/توصیه: پروسیجرهای ارتوپدی ریسک متفاوتی جهت DVT دارند. پروسیجرها بطور کلاسیک مطابق با بروز VTE دسته‌بندی شده‌اند و total hip arthroplasty THA و total knee arthroplasty TKA بیشترین ریسک را در مقایسه بافیکس کردن شکستگی‌های لگن دارند.

قدرت توصیه: محدود

رای نمایندگان: موافق (98.52٪)، مخالف (0.49٪)، ممتنع (0.99٪) - اجماع عمومیقوی

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14. آیا مدت عمل جراحی روی بروز VTE بعد عمل تاثیر می‌گذارد؟

پاسخ/توصیه: مدت عمل جراحی مستقیما باعث افزایش بروز VTE بعد عمل می‌شود. هنگامیکه عوارض حین عمل یا پیچیدگی‌های عمل روی مدت عمل اثر گذاشت، ریسک VTE باید مجددا ارزیابی شود.

قدرت توصیه: متوسط

رای نمایندگان: موافق (98.7٪)، مخالف (0.48٪)، ممتنع (1.45٪) - اجماع عمومیقوی

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15. آیا حجم خون از دست رفته حین عمل جراحی سبب افزایش ریسک بروز VTE در بیمارانی که تحت پروسیجرهای ارتوپدی قرار می‌گیرند می‌شود؟

پاسخ/توصیه: داده قوی در مورد این مساله وجود ندارد. اگرچه بدلیل ارتباط تزریق خون آلوژنیک و VTE بعد عمل وجود دارد، توصیه می‌شود استراتژی‌ها بر پایه کاهش از دست دادن خون حین عمل و احتمال نیاز به تزریق خون آلوژنیک باشد.

قدرت توصیه: محدود

رای نمایندگان: موافق (97.56٪)، مخالف (0.49٪)، ممتنع (1.95٪) - اجماع عمومیقوی

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16. آیا تزریق خون آلوژنیک سبب افزایش ریسک بروز VTE در بیمارانی که تحت پروسیجرهای ارتوپدی قرار می‌گیرند می‌شود؟

پاسخ/توصیه: اکثریت مطالعات بالینی، اکثرا از مطالعات total joint arthroplasty TJA، به وجود ارتباط بین تزریق خون آلوژنیک و VTE بعد از عمل جراحی ارتوپدی اشاره می‌کنند. بر اساس پایه‌های علمی این ارتباطات برای تشویق جراحان جهت رساندن میزان استفاده از تزریق خون آلوژنیک به کمترین میزان در زمان حول جراحی کافی هستند.

قدرت توصیه: محدود

رای نمایندگان: موافق (95.10٪)، مخالف (1.48٪)، ممتنع (3.43٪) - اجماع عمومیقوی

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17. آیا تزریق ترانگزامیک اسید TXA سبب افزایش ریسک بروز VTEدر بیمارانی که تحت پروسیجرهای ارتوپدی قرار می‌گیرند می‌شود؟

پاسخ/توصیه: A در بیماران بدون سابقه VTE در گذشته، تزریق ترانگزامیک اسید TXA سبب افزایش ریسک بروز VTE دربیمارانی که تحت پروسیجرهای ارتوپدی قرار می‌گیرند نمی‌شود. قدرت توصیه: A قوی

پاسخ/توصیه: B در بیماران با سابقه VTE یا افزایش ریسک انعقادپذیری، تزریق ترانگزامیک اسید TXA سبب افزایش ریسکبروز VTE در بیمارانی که تحت پروسیجرهای ارتوپدی قرار می‌گیرند نمی‌شود.

قدرت توصیه: Bمتوسط

رای نمایندگان: موافق (97.06٪)، مخالف (0.98٪)، ممتنع (1.96٪) - اجماع عمومیقوی

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18. آیا بستن تورنیکه به اندام تحتانی سبب افزایش بروز VTE بعد عمل جراحی می‌شود؟

پاسخ/توصیه: جهت اثبات ارتباط بین بستن تورنیکه حین عمل ارتوپدی و بروز VTE بعد عمل شواهد ناکافی است.

قدرت توصیه : محدود

رای نمایندگان : موافق (91.58٪)، مخالف (4.95٪)، ممتنع (3.47٪) - اجماع عمومیقوی

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19. آیا بستن تورنیکه به اندام فوقانی سبب افزایش بروز VTE بعد عمل جراحی می‌شود؟

پاسخ/توصیه: بستن تورنیکه در جراحی اندام فوقانی سبب افزایش میزان VTE نمی‌شود.

قدرت توصیه: محدود

رای نمایندگان: موافق (96.55٪)، مخالف (0.49٪)، ممتنع (2.96٪) - اجماع عمومیقوی

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20. آیا هپارین حین عمل موثر و ایمن جهت پیشگیری از VTE بعد عمل جراحی در بیمارانی که تحت پروسیجرهای ارتوپدی قرار می‌گیرند است؟

پاسخ/توصیه: تزریق وریدی هپارین حین عمل به بیمارانی که تحت عمل total hip arthroplasty قرار می‌گیرند بررسی شده و ایمنی و اثر بخشی آن در جلوگیری از VTE بعد عمل اثبات شده. مطالعات بیشتری لازم است تا اثربخشی این روش در دیگر اعمال جراحی ارتوپدی نیز اثبات شود.

قدرت توصیه: متوسط (برای لگن)

رای نمایندگان: موافق (84.06٪)، مخالف (8.7٪) ممتنع (7.25٪) - اجماع عمومیقوی

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21. آیا نوع ماده بیهوشی تزریق شده روی ریسک VTEدر جراحی ارتوپدی اثر دارد؟

پاسخ/توصیه: بیهوشی neuraxial با کاهش ریسک VTE بعد از ارتروپلاستی مفصل اندام تحتانی مرتبط است و در صورت امکان باید به عنوان بخشی از رژیم پروفیلاکسی در نظر گرفته شود.

قدرت توصیه: متوسط

رای نمایندگان: موافق (94.58٪)، مخالف (2.46٪)، ممتنع (2.96٪) - اجماع عمومیقوی

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22. آیا استفاده از PMMA cement در جراحی ارتوپدی روی ریسک VTE اثر دارد؟

پاسخ/توصیه: اگرچه PMMA و اجزا آن در شرایط آزمایشگاهی خواص ترومبوژنیک نداشتند؛ استفاده از آن روی ریسک بروزآمبولی اثر دارد که به بعضی از این آمبولی های رخ داده ممکن است عنوان VTEداده شده باشد.

قدرت توصیه : متوسط

رای نمایندگان: موافق (84.77٪)، مخالف (9.94٪)، ممتنع (5.58٪) - اجماع عمومیقوی

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23. آیا پوزیشن دادن بیمار حین عمل جراحی ارتوپدی روی ریسک ایجاد VTE اثر دارد؟

پاسخ/توصیه: پوزیشن دادن بیمار حین بعضی عمل های جراحی ارتوپدی ممکن است روی ریسک VTE اثر گذار باشد اما هیچ مطالعه با کیفیتی نیست که به این مطلب اشاره کند. توصیه می‌کنیم جراحان بر اساس دسترسی محل عمل جراحی و تجربه تکنیکال عمل جراحی خود این تصمیمات را اتخاذ کنند بجای اینکه به آن به عنوان متدی جهت کاهش ریسک VTE نگاه کنند.

قدرت توصیه: اجماع

رای نمایندگان: موافق (97.04٪)، مخالف (0.49٪)، ممتنع (2.46٪) - اجماع عمومیقوی

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24. آیا یک سیستم امتیازبندی معتبر جهت تخمین ریسک بروز VTEدر بیماری که تحت عمل ارتوپدی قرار می‌گیرد وجود دارد؟

پاسخ/توصیه: در حال حاضر هیچ روش معتبر سنجش ریسک که بتواند بین تمام زیر مجموعه‌های تخصصی ارتوپدی قابل استفاده باشد وجود ندارد. بیشتر مطالعات در مورد هشدار این موضوع هستند که امتیازهای ریسک فاکتورها از مقالات تعویض مفصل منشا می‌گیرند و بطور کلی از ریسک فاکتورهای مشابهی جهت دسته‌بندی بیماران با ریسک بالا و پایین استفاده می‌کنند. متاسفانه هیچکدام این امتیازها به درستی خروجی معتبری ندارند. آنها همچنین فاقد هرگونه ارزیابی جهت رویدادهای خونریزی‌های ماژور هستند. گذشته ازین، اثر این امتیازهای ریسک فاکتورها بر پیامد بیماران و تصمیم‌گیری نامشخص مانده است. مطالعات بیشتر جهت نشان دادن این محدودیت‌های ماژور نیاز است.

قدرت توصیه: متوسط

رای نمایندگان : موافق (99.52٪)، مخالف (۰/۰۰٪)، ممتنع (0.48٪) - اجماع عمومیقوی

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25. آیا یک سیستم امتیازبندی جهت تخمین ریسک بروز رویدادهای خونریزی ماژور در بیماری که تحت عمل ارتوپدی قرار می‌گیرد وجود دارد ؟

پاسخ/ توصیه: هیچ سیستم ارزیابی ریسک در دسترسی جهت پیش‌بینی رویدادهای خونریزی ماژور بدنبال اعمال جراحی ارتوپدی وجود ندارد. اخیرا یک بیانیه اجماع عمومیمحدود به بیمارانی که بطور مزمن در حال مصرف ضد انعقاد خوراکی که تحت اعمال جراحی بخصوصی قرار می‌گیرند، ریسک رویداد خونریزی ماژور را می‌سنجد. (بالا، پایین/ متوسط و کمینه)

قدرت توصیه: اجماع

رای نمایندگان : موافق (98.7٪)، مخالف (1.45٪)، ممتنع (1.45٪) - اجماع عمومیقوی

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26. آیا نقشی برای دسته‌بندی بیمارانی که تحت اعمال ارتوپدی قرار می‌گیرند جهت ریسک خونریزی وجود دارد؟ اگر چنین استآیا پروفیلاکسی VTE باید بر اساس پروفایل ریسک خونریزی تغییر کند؟

پاسخ/توصیه: بر اساس بروز و شدت پیامدهای رویدادهای خونریزی ماژور طی اعمال ارتوپدی، نیاز جدی به ارزیابی ریسک قبل عمل جراحی وجود دارد. در حالیکه توجه زیادی جهت شناسایی ریسک فاکتورهای VTE و گایدلاین‌های زیادی جهت کاهش این ریسک وجود دارند، major bleeding event MBE عوارض جدی هستند که توجه کمتری می‌گیرند. بطور غیر قابل توجیه، MBE به عنوان پیامد ثانویه در نظر گرفته می‌شود و بنابراین کوهورت‌ها کوچکتر از آن هستند که اجازه آنالیز قدرتمند و کافیرا جهت بررسی این موضوع بدهند. در حالیکه مقالات فعلی نمی‌توانند از اثر یک ماده پروفیلاکسی نسبت به دیگری در مورد ریسک MBE حمایت کند، مهم است که در نظر داشته باشیم هر حرکت سودآور در جهت کاهش ریسک VTE باید به عنوان وزنه‌ای درجهت افزایش ریسک خونریزی در نظر گرفته شود.

قدرت توصیه: محدود

رای نمایندگان: موافق (97.21٪)، مخالف (0.93٪)، ممتنع (1.86٪) - اجماع عمومیقوی

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27. آیا Thromboelastography TEG در پیش‌بینی ریسک بروز VTE در بیماری که تحت عمل جراحی ارتوپدی قرار می‌گیرد نقش دارد؟

پاسخ/توصیه: اگرچه در گذشته بطور معتبر در زیر شاخه‌های تخصصی بقیه جراحی‌ها جهت پیش‌بینی VTE استفاده می‌شده، TEGدر بیمارانی که تحت اعمال ارتوپدی قرار می‌گیرند به اندازه کافی مورد آزمایش قرار نگرفته است. اگرچه تعداد محدودی ازمطالعات TEG را به عنوان یک روش مفید جهت ارزیابی افزایش انعقادپذیری ارتوپدی و VTE بعد صدمات تروماتیک و/یا مداخله جراحی بر اساس maximal amplitude>65 معرفی کرده‌اند.

قدرت توصیه: متوسط

رای نمایندگان: موافق (89.74٪)، مخالف (1.54٪)، ممتنع (8.72٪) - اجماع عمومیقوی

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28. آیا بروز DVT در اندام تحتانی بعد از آرتروپلاستی کامل مفصل سبب انتشار PE می‌شود؟

پاسخ/توصیه: انتشار DVT که سبب PE می‌شود در بیماران با لخته غیر قابل توجیه و مرتبط با فنوتایپ بیش انعقادی در فرداست. در حالیکه این مسئله که PE برآمده از DVT است، شناخته شده است، یک رابطه مستقیم بین انتشار DVT و PE دربیمارانی که تحت اعمال جراحی ارتوپدی قرار می‌گیرند بطور خاص در آرتروپلاستی کامل مفصل وجود ندارد.

قدرت توصیه: متوسط

رای نمایندگان: موافق (90.59٪)، مخالف (5.94٪)، ممتنع (3.47٪) - اجماع عمومیقوی

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29. چگونه بیماران با DVT پروگزیمال (پوپلیتئال یا سوپراپوپلیتئال) درمان می‌شوند؟

پاسخ/توصیه: در راستای گایدلاین‌های فعلی پیشنهاد می‌شود به درمان DVT پروگزیمال که عروق پوپلیتئال یا سوپراپوپلیتئال رادرگیر می‌کند و بطور حاد بعد از اعمال جراحی ارتوپدی دچار این حالت شده‌اند باید توجه شود.

قدرت توصیه: متوسط

رای نمایندگان: موافق (98.54٪)، مخالف (0.97%)، ممتنع (0.49٪) - اجماع عمومیقوی

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30. چگونه بیماران با DVT دیستال بعد عمل جراحی درمان می‌شوند؟

پاسخ/توصیه: در نبود شواهد قطعی، عقیده این کارگروه این است که بیماران با DVT ایزوله دیستال را می‌توان بدون درمان مانیتور نمود یا با آسپرین درمان کرد.

قدرت توصیه: محدود

رای نمایندگان: موافق (79.70٪)، مخالف (14.85٪)، ممتنع (5.45٪) - اجماع عمومیقوی

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31. مدیریت ترومبوز ورید سولئال که متعاقب یک عمل جراحی ارتوپدی ایجاد شده است چگونه بایستی باشد؟

پاسخ/توصیه: شواهد با کیفیت بالا البته به میزان کم در منابع فعلی در مورد درمان ترومبوز ورید سولئال پس از جراحی ارتوپدی موجود است. براین اساس

امکان انتشار ترومبوز وریدسولئال به وریدهای پروگزیمال کم است. بنابراین به نظر می رسد مونیتورینگ بیمار با تکرار تصویر برداری و استفاده احتمالی از آسپیرین کافی باشد.

قدرت توصیه: محدود

رای نمایندگان: موافق (89.11٪)، ممتنع (6.93٪)، مخالف (3.96٪) – اجماع عمومیقوی

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32. زمان وقوع حوادث ترومبوآمبولی VTE، چه زمانی پس از اعمال جراحی ارتوپدی است؟

پاسخ/توصیه: زمان بحرانی ایجاد حوادث ترومبوآمبولی یک ماه اول پس از عمل جراحی است ولی ممکن است این خطر برای زمان بیشتری باقی بماند.

قدرت توصیه: محدود

رای نمایندگان: موافق (97.56٪)، ممتنع (0.98٪)، مخالف (1.46٪) – اجماع عمومیقوی

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33. آیا بیماری که ترومبوز وریدی عمقی فعال اندام تحتانی دارد می تواند تحت عمل جراحی ارتوپدی قرار گیرد؟

پاسخ/توصیه: شواهد علمی محدودی وجود دارد که از ایمن بودن انجام عمل جراحی ارتوپدی در حضور DVT و یا آمبولی ریه حمایت کند. بنابراین تصمیم‌گیری برای انجام عمل جراحی در این بیماران بایستی کاملا براساس شرایط فردی بیمار باشد. شرح حال بیمار، نوع عمل جراحی، گسترش ترومبوز وریدی ویا آمبولی، معیارهای فیزیولوژیک و شانس خونریزی پس از عمل بایستی در نظر گرفته شود.

قدرت توصیه: محدود

رای نمایندگان: موافق (95.61٪)، ممتنع (2.44٪)، مخالف (1.95٪) – اجماع عمومیقوی

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34. چه فاصله زمانی پس از DVT ویا آمبولی ریه بیمار می‌تواند تحت عمل انتخابی ارتوپدی قرار بگیرد؟

توصیه/پاسخ: در غیاب شواهد قطعی در این مورد، نظر این کارگروه بر تاخیر 6 ماهه اعمال جراحی الکتیو در بیماری است که به تازگی تشخیص DVT و یا آمبولی ریه داشته است.

قدرت توصیه: اجماع

رای نمایندگان: موافق (88.61٪)، ممتنع (7.43٪)، مخالف (3.96٪) – اجماع عمومیقوی

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35. آیا درمان نکردن DVT حاد اندام تحتانی در بیمارانی که عمل جراحی ارتوپدی می شوند، عوارض جانبی دارد؟

پاسخ/توصیه: براساس اطلاعات موجود بیماران با DVTپروگزیمال ممکن است درخطر بالاتری برای ایجاد آمبولی ریه باشند. شواهد محدود موجود نشان می‌دهد که غالب موارد DVT دیستال در صورت درمان نشدن بدون عارضه خواهند بود.

قدرت توصیه: محدود

رای نمایندگان: موافق (82.94٪)، ممتنع (14.69٪)، مخالف (2.37٪) – اجماع عمومیقوی

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36. آیا لازم است بیماران بدون علامتی که تحت جراحی ارتوپدی قرار می‌گیرند، برای DVT غربالگری شوند؟

پاسخ/توصیه: غربالگری با سونوگرافی پیش و بعد از اعمال جراحی ارتوپدی برای بیماران بدون علامت توصیه نمی‌شود.

قدرت توصیه: متوسط (برای پس از عمل) و محدود (برای پیش از عمل)

رای نمایندگان: موافق (97.67٪)، ممتنع (1.40٪)، مخالف (0.93٪) – اجماع عمومیقوی

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37. آیا علائم کلینیکی مطرح کننده DVT اندام تحتانی وجود دارد؟

توصیه/پاسخ: تشخیص کلینیکی ترومبوز عمقی اندام تحتانی غیراختصاصی است و یافته های بالینی ارزش تشخیصی کمی پایینی دارند.

قدرت توصیه: متوسط

رای نمایندگان: موافق (96.73٪)، ممتنع (2.34٪)، مخالف (0.93٪) – اجماع عمومیقوی

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38. آیا مارکرهای سرولوژی برای تشخیص DVT/PE وجود دارد؟

پاسخ/توصیه: مارکرهایی برای تشخیص ترومبوز وریدی عمقی/ آمبولی ریه وجوددارد که شایعترین آنها دی- دایمر است.

اگرچه مارکرهای دیگری نیز در دسترس هستند شامل PAI-1 : SF,FDP,TAT,PF1+2,

قدرت توصیه Grade B :شواهد متوسطی از مطالعات سطح 2و3 برای استفاده از مارکرهای سرولوژی موجود است

رای نمایندگان: موافق (88.26٪)، ممتنع (8.45٪)، مخالف (3.45٪) – اجماع عمومیقوی

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39. مناسب ترین روش تصویربرداری برای پیدا کردن ترومبوز وریدی عمقی اندام تحتانی و فوقانی کدام است؟

پاسخ/توصیه: مناسب ترین روش تصویربرداری جهت ترومبوز وریدی عمقی اندام تحتانی و فوقانی ، کمپرشن اولتراسوند CUS)) است. انتخاب بین پروگزیمال اندام ، تمام ساق ویا سریال CUS بر اساس احتمال کلینیکی قبلی است.

قدرت توصیه: قوی

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40. آیا ونوگرام اندام تحتانی نقشی در تشخیص DVT اندام تحتانی دارد؟

توصیه/پاسخ 1: استفاده از ونوگرام اندام تحتانی برای تشخیص ترومبوز وریدی عمقی اندام تحتانی توصیه نمی‌شود. برای بیمارانی که مشکوک به ترومبوز وریدی عمقی باشند استفاده ازکمپرشن اولتراسوند توصیه می‌شود.

قدرت توصیه: قوی

پاسخ/توصیه 2: برای بیمارانی که مشکوک به ترومبوز ایلیاک ویا وناکاوا هستند و یا نتایج کمپرشن اولتراسوند قطعیت نداشته ویا قابل انجام نبوده است بایستی سی‌تی ونوگرافی (CTV) و یا ام‌آر ونوگرافی (MRV) بایستی انجام شود بسته به در دسترس بودن و تجربه مرکز مورد نظر

قدرت توصیه : متوسط

پاسخ/توصیه3: در بیمارانی که بسیار مشکوک به ترومبوز وریدی اندام تحتانی هستند وکمپرشن اولتراسوند قابل انجام نیست ویا نتایج غیر قطعی داشته است بایستی وریدهای زیر لیگامان اینگوینال با CTV یا MRV یا کنتراست فلبوگرافی بررسی شوند.

قدرت توصیه : متوسط

پاسخ/توصیه 4: در کارآزمایی‌های بالینی که نقطه خاتمه مطالعه دارند مثل به وجود آمدن ترومبوز وریدی عمقی، می‌توان از ونوگرافی با کنتراست به دلیل قوانین نظارتی موجود استفاده کرد.

قدرت توصیه: متوسط

رای نمایندگان: موافق (99.07٪)، ممتنع (0.47٪)، مخالف (0.47٪) – اجماع عمومیقوی

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41. کدام روش تشخیص برداری برای آمبولی وریدی متعاقب اعمال جراحی ارتوپدی، مناسب‌ترین است؟

توصیه/پاسخ: پیشرفت‌های تصویربرداری منجر به بالارفتن قدرت تشخیص آمبولی در عروق ریه شده است.

برخی از این روش‌ها فاقد اهمیت بالینی هستند و برخی از یافته‌ها ممکن است آمبولی واقعی نباشند. استاندارد طلائی برای تشخیص آمبولی وریدی همچنان سی‌تی آنژیوگرافی CTPA می‌باشد.

قدرت توصیه: قوی

رای نمایندگان: موافق (99.07٪)، ممتنع (0.00٪)، مخالف (0.93٪) – اجماع عمومیقوی

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42. آیا تمام نقائص پرشدگی شریانی ریه در مقاطع عرضی تصویربرداری مطرح کننده آمبولی ریه هستند؟

توصیه / پاسخ :تمام نقائص پرشدگی که در مقاطع عرضی تصویر برداری های ریه دیده می شوند، مطرح کننده آمبولی ریه نیستند. موارد متعدد دیگری هستند که می توانند باعث ایجاد این نقائص پرشدگی شوند که شامل : نئوپلاسم داخل عروق شریان های ریوی ، درگیری عروق ریوی بیماریهای وابسته به IgG-4 ، بیماری بهجت ،آرتریت تاکایاسو،سندرم هوگس -استووین و آرتیفکت خطی شریان ریوی هستند.

قدرت توصیه: قوی

رای نمایندگان: موافق (90.95٪)، ممتنع (0.48٪)، مخالف (8.57٪) – اجماع عمومیقوی

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43. آیا همه آمبولی‌های که درمقاطع عرضی ریه رویت می شوند به یک میزان منجر به اختلال اکسیژن رسانی (هیپوکسی) می‌شوند؟

توصیه/پاسخ: بر اساس شواهد موجود ،تمام آمبولی‌های ریه که در تصویربرداری دیده می شوند منجر به درجات یکسانی از هیپوکسی نمی شوند.

در مورد رابطه اندازه و محل آمبولی ریه با شدت هیپوکسی شواهد موجود متناقض است.

پزشکان معالج بایستی بیماران آمبولی ریه را براساس وضعیت همودینامیکشان و میزان اختلال عملکرد بطن راست طبقه بندی خطر کنند. بر طبق دستورالعمل های بالینی جامعه قلب اروپا 2019 (ESC) و جامعه هماتولوژیست‌های آمریکا 2020 (ASH)

قدرت توصیه: محدود

رای نمایندگان: موافق (92.2٪)، ممتنع (0.98٪)، مخالف (6.83٪) – اجماع عمومیقوی

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44. آیا بین آمبولی ریه متعاقب جراحی‌های ارتوپدی و هیپرتنشن ثانوی شریان پولمونری رابطه‌ای وجود دارد؟

هیپرتنشن پولمونری مزمن ترومبوآمبولیک CTPHرابطه قوی با آمبولی ریوی قبلی دارد. البته بروز این حالت در جراحی‌های ارتوپدی خیلی مورد بررسی قرار

نگرفته است. با در نظر گرفتن اینکه آمبولی ریه عارضه شناخته شده متعاقب جراحی‌های ارتوپدی است و میزان بروز CTPH پس از آمبولی ریه 0.1٪ تا 9.1٪ می‌باشد. بایستی بیماران آمبولی ریه در ارتوپدی از جهت بروز CTPH پایش شوند تا امکان تشخیص زودتر ومداخله‌های زودهنگام بخصوص اندآرترکتومی شریان پولمونر میسر باشد، تا باعث کاهش عوارض شدید و مرگ ومیر شود.

قدرت توصیه: محدود

رای نمایندگان: موافق (88.78٪)، ممتنع (2.93٪)، مخالف (8.29٪) – اجماع عمومیقوی

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45. آیا تجویز پروفیلاکسی ترومبوز وریدی عمقی در کاهش خطر آمبولی‌های کشنده ریوی در ارتوپدی موثر است؟

توصیه/پاسخ: شواهدی که نشان دهد پروفیلاکسی ترومبوز وریدی عمقی خطر ترومبوآمبولی‌های کشنده ریوی را در جراحی‌های انتخابی ارتوپدی خصوصا در اندام تحتانی شامل عمل‌های تعویض مفصل کم کند وجود ندارد. در بیماران با شکستگی هیپ، شواهد محدودی در نقش آسپیرین در کاهش مرگ ومیر آمبولی‌های ریوی وجود دارد که در حد توصیه نمی‌باشد.

قدرت توصیه: محدود

رای نمایندگان: موافق (91.13٪)، ممتنع (5.42٪)، مخالف (3.45٪) – اجماع عمومیقوی

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46. برای تعیین اثربخشی ترومبوآمبولی وریدی (VTE) از چه نقطه پایانی باید استفاده کرد؟

پاسخ/توصیه: بروز علائم ترومبوز وریدی عمقی (DVT)و آمبولی ریوی (PE) باید به عنوان نقطه پایانی برای ارزیابی اثر بخشی یک عامل پیشگیری کننده‌ی ترومبوآمبولی وریدی (VTE) استفاده شود.

قدرت توصیه: متوسط.

رای نمایندگان: موافق (94.63٪)، مخالف (4.39٪)، ممتنع (0.98٪) - اجماع عمومیقوی

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47. مدت زمان بهینه پروفیلاکسی VTE به دنبال جراحی‌های اصلی ارتوپدی چقدر است؟

پاسخ/توصیه: به دنبال جراحی‌های اصلی ارتوپدی پیشگیری از ترومبوآمبولی وریدی - (VTE) شروع در بیمارستان - باید برای 14 تا 35 روز پس از ترخیص بیمار ادامه یابد.

قدرت توصیه: قوی.

رای نمایندگان: موافق (94.86٪)، مخالف (4.21٪)، ممتنع (0.93٪)، - اجماع عمومیقوی

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48. مقرون به صرفه بودن هر یک از داروهای پیشگیری کننده VTE که ممکن است در بیماران تحت جراحی ارتوپدی استفاده شود، چقدر است؟

پاسخ/توصیه: آسپرین (ASA) بیشترین میزان مقرون به صرفگی را دارد، زیرا هزینه ی دارو تحت تاثیر تورم نیست، میزان عوارض مانند خونریزی همراه با تجویز ASA کم است و نیازی به آزمایش خون یا روش‌های دیگر برای نظارت درمان وجود ندارد. عامل مقرون به صرفه بودن روش های مختلف پروفیلاکسی VTE بیشتر به هزینه اولیه ماده شیمیایی یا روش مکانیکی، نیاز به پایش خون، میزان عوارض مرتبط با تجویز روش، و نیاز به reversal agentsبستگی دارد. ما می‌دانیم که هزینه‌ی عوامل پیشگیری کننده مختلف به طور گسترده در سراسر جهان متفاوت است.

قدرت توصیه: متوسط.

رای نمایندگان: موافق (92.52٪)، مخالف (4.21٪)، ممتنع (3.27٪) - اجماع عمومیقوی

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پاسخ/توصیه: اگر چه در پایبندی به روش‌های مختلف پیشگیری ترومبوآمبولی وریدی (VTE)، تنوع وجود دارد، بسیاری از تفاوت‌ها توسط عوامل جمعیت شناختی، اجتماعی-اقتصادی، مرتبط با بیماری، مربوط با

بیمار و درمان مرتبط با سیستم درمانی توضیح داده می‌شوند. به عنوان یک عامل پیش بینی کننده پایبندی بیمار، ترجیحات فردی بیمار فرصتی برای ایجاد ارزش در مراقبت شخص محور هست.

قدرت توصیه: محدود.

رای نمایندگان: موافق (93.30٪)، مخالف (2.39٪)، ممتنع (4.31٪) - اجماع عمومیقوی

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پاسخ/توصیه: بر اساس شواهد موجود، ترومبوآمبولی وریدی ترکیبی متوالی نشان داده نشده است که پروفیلاکسی (VTE) نسبت به سایر رژیم‌های درمانی تعیین شده پروفیلاکسی برتری دارد

قدرت توصیه: محدود.

رای نمایندگان: موافق (95.73٪)، مخالف (1.42٪)، ممتنع (2.84٪) - اجماع عمومیقوی

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51. آیا موارد منع مصرف خاصی برای تجویز هر عامل پیشگیری کننده VTE وجود دارد؟

پاسخ/توصیه: هر عامل پیشگیری کننده ترومبو آمبولی وریدی (VTE) رابطه مبتنی بر شواهد موارد منع مصرف مطلق و نسبی دارد، که باید در نظر گرفته شده و با خطر VTE بیمار متعادل می‌شود.

نقطه قوت توصیه: قوی.

رای نمایندگان: موافق (100.00٪)، مخالف (0.00٪)، ممتنع (0.00٪) - اجماع عمومیقوی به اتفاق آرا

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52. آیا پیشگیری VTE در بیماران مزمن بیماری کلیوی باید در هنگام انجام اقدامات ارتوپدی تغییر کند؟

پاسخ/توصیه: در بیماران مزمن بیماری کلیوی، عوامل دارویی مورد استفاده در پروفیلاکسی VTE ممکن است نیاز به تنظیم دوز جهت جلوگیری از خونریزی شدید یا سایر عوارض داشته باشد. در بیماری کلیوی پیشرفته ناپایدار، هپارین شکسته نشده (UFH) یا پیشگیری مکانیکی ممکن است به تنهایی به عنوان پروفیلاکسی VTE ترجیح داده شود.

قدرت توصیه: محدود.

رای نمایندگان: موافق (94.58٪)، مخالف (0.99٪)، ممتنع (4.43٪) - اجماع عمومیقوی

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53. آیا پیشگیری VTE را در بیماران مبتلا به بیماری کبدی مزمن در هنگام انجام ارتوپدی باید تغییر داد؟

پاسخ/توصیه: بیماری مزمن کبدی (CLD) به تنهایی نباید دلیلی برای خودداری یا تغییر پیشگیری از ترومبوآمبولی وریدی (VTE) در نظر گرفته شود. تصمیم به احتمالاً اصلاح VTE پروفیلاکسی باید چند رشته ای باشد و بر اساس عوامل خطر برای VTE و خونریزی فردی است.

نقطه قوت توصیه: اجماع.

رای نمایندگان: موافق (95.12٪)، مخالف (0.49٪)، ممتنع (4.39٪) - اجماع عمومیقوی

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54. نشانه‌های جستجوی متخصص ترومبوز یا مشاور هماتولوژی برای پیشگیری از VTE، در بیمارانی که تحت عمل های ارتوپدی انتخابی قرار می‌گیرند چیست؟

پاسخ/توصیه: در صورت عدم وجود قابل اعتماد شواهد، نظر این گروه کاری است که بیماران مبتلا به خونریزی شناخته شده یا مشکوک یا اختلال انعقادی، کراتینین کلیرانس < 30 میلی‌لیتر در دقیقه، بیماری فعال کبدی صفراوی، با کم خونی یا ترومبوسیتوپنی قابل توجه یا بیمارانی که نیاز به استفاده مداوم از ضد پلاکت و/یا ضد انعقاد دارند، ممکن است از یک متخصص ترومبوز یا مشاوره هماتولوژی بهره‌مند شوید.

نقطه قوت توصیه: اجماع.

رای نمایندگان: موافق (95.31٪)، مخالف (2.82٪)، ممتنع (1.88٪) - اجماع عمومیقوی

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55. اگر بیمار در گروه "خطر افزایش یافته" توسعه VTE قرار گیرد، آیا عوامل خاصی وجود دارد که کارایی آن نسبت به سایر داروهای ضد انعقاد افزایش یافته است؟

پاسخ/توصیه: شواهد محدودی برای حمایت از اینکه برخی از داروهای ضد انعقاد نسبت به سایر داروهای ضد انعقاد اثر بخشی را افزایش داده‌اند، وجود دارد. عامل خاصی که خطر ابتلای بیمار به ترومبوآمبولی وریدی (VTE) را افزایش می‌دهد، باید در نظر گرفته شده و درمان متناسب با آن علت خاص، پس از در نظر گرفتن کلاس دارویی و رژیم دوز طراحی شود.

قدرت توصیه: محدود.

رای نمایندگان: موافق (97.07٪)، مخالف (1.95٪)، ممتنع (0.98٪) - اجماع عمومیقوی

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56. آیا باید پروفیلاکسی VTE در بیمار تحت عمل ارتوپدی با تشخیص فیبریلاسیون حاد دهلیزی باید تغییر کند؟

پاسخ/توصیه: هیچ مدرکی وجود ندارد که نشان دهد که پروفیلاکسی ترومبوآمبولی وریدی (VTE) در بیماران با تشخیص فیبریلاسیون حاد دهلیزی (AF)، که تحت عمل ارتوپدی قرار می‌گیرند باید تغییر یابد. با این حال، طبق آخرین توصیه‌های انجمن قلب آمریکا (AHA)، کالج آمریکایی قلب و عروق (ACC)، انجمن ریتم قلب (HRS)، و انجمن قلب و عروق اروپا (ESC)، بیماران مبتلا به AF و خطر بالای حوادث آمبولی باید درمان ضد انعقاد دریافت کنند.

نقطه قوت توصیه: متوسط.

رای نمایندگان: موافق (97.04٪)، مخالف (0.49٪)، ممتنع (2.46٪) - اجماع عمومیقوی

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57. بهینه‌ترین مدیریت یک بیمار با پارامترهای انعقادی بالا مانند INR بالا، که تحت عمل جراحی ارتوپدی اورژانسی قرار می‌گیرد چیست؟

پاسخ/توصیه: در بیمارانی که آنتاگونیست ویتامین K (VKA) با افزایش نسبت بین المللی نرمال شده (INR) مصرف می‌کنند، و نیاز به جراحی ارتوپدی اورژانسی دارند، ما پیشنهاد به اصلاح INR≥ 1.5 می‌کنیم.

قدرت توصیه: محدود.

رای نمایندگان: موافق (93.50٪)، مخالف (3.00٪)، ممتنع (3.50٪) - اجماع عمومیقوی

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58. روش بهینه پروفیلاکسی VTE برای بیماران مبتلا به اختلالات خونریزی مانند هموفیلی یا بیماری فون ویلبراند چیست؟

پاسخ/توصیه: پروفیلاکسی ترومبوآمبولی وریدی مکانیکی (VTE) برای بیماران با اختلالات خونریزی تحت عمل جراحی ارتوپدی مناسب‌ترین است.

برای گروه‌های بیمار منتخب که ممکن است فنوتیپ پروترومبوتیک بالاتر را بیان کنند و در کسانی که از فاکتورهای لخته شدن یا آنتی بادی‌های مونوکلونال که ممکن است با افزایش خطر ترومبوز همراه باشند، افزودن پروفیلاکسی خفیف VTE دارویی باید در نظر گرفته شود.

قدرت توصیه: محدود.

رای نمایندگان: موافق (96.50٪)، مخالف (0.00٪)، ممتنع (3.50٪) - اجماع عمومیقوی

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59. روش بهینه پروفیلاکسی VTE برای بیماران مبتلا به اختلالات لخته شدن خون مانند ترومبوفیلی چیست؟

پاسخ/توصیه: بیماران مبتلا به ترومبوفیلی باید پروفیلاکسی ترومبوآمبولی وریدی (VTE) برای جراحی بزرگ ارتوپدی دریافت کنند. ما ترکیبی از مداخلات مکانیکی و دارویی را تا 35 روز پس از جراحی توصیه می‌کنیم. برای جراحی‌های کمتر تهاجمی اسکلتی عضلانی، پروفیلاکسی VTE با توجه به خطر پروترومبوتیک هر روش، با تاکید بر اندام تحتانی باید تنظیم شود.

قدرت توصیه: محدود.

رای نمایندگان: موافق (95.02٪)، مخالف (1.49٪)، ممتنع (3.48٪) - اجماع عمومیقوی.

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60. علائم استفاده از فیلتر IVC در بیمارانی که تحت عمل‌های ارتوپدی قرار می‌گیرند چیست؟

پاسخ/توصیه: فیلتر ورید اجوف تحتانی (IVC) ممکن است برای بیمارانی در نظر گرفته شوند که در معرض خطر بالای ترومبوآمبولی وریدی (VTE) هستند و در کسانی که ضد انعقاد شیمیایی منع مصرف دارد، استفاده شوند. فیلترهای IVC نباید به صورت روتین برای پیشگیری از ترومبوز وریدی عمقی (DVT)، به ویژه زمانی که می‌توان پروفیلاکسی شیمیایی را تجویز کرد، استفاده شوند.

قدرت توصیه: محدود.

رای نمایندگان: موافق (94.23٪)، مخالف (3.85٪)، ممتنع (1.92٪) - اجماع عمومیقوی

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61. آیا فراهم بودن داروی معکوس کننده اثر بر انتخاب روش دارویی پیشگیری ضد انعقاد اثر می‌گذارد؟

پاسخ/توصیه: داروهای شایع ضد انعقاد مشخصات ایمنی قابل قبول و دستورالعمل ثابت شده برای خنثی سازی اثر دارند. بعضی از داروها را ممکن است بتوان در طی عمل جراحی به صورت ایمن ادامه داد (نظیر آسپرین کلوپیدوگرل) در حالی که بعضی دیگر ممکن است بلافاصله قبل عمل قطع شوند (نظیر هپارین با وزن مولکولی پایین). در مورد گروه دیگر از داروها نظیر انتاگونیست ویتامین k نظیر وارفارین و direct oral anticoagulant (DOAC) نیاز است که برای مدت زمان بیشتری قبل از انجام عمل جراحی قطع شوند. عوامل معکوس کننده اثر نظیر کنسانتره کمپلکس پروتئین و آنتی دوت های اختصاصی تر مانند idarucizumab و endexine alfa با وجود دسترسی محدود ممکن است در موارد اورژانسی این نیاز وجود داشته باشد که تجویز شوند. بنابراین در دسترس بودن و هزینه عوامل آنتی دوت فاکتورهای مهمی در انتخاب داروی ضد انعقاد هستند.

قدرت توصیه: محدود

رای اعضا: موافق (89.15٪)، مخالف (4.25٪)، ممتنع (6.60٪) – اجماع عمومیقوی

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62. آیا پروتکل بازتوانی بعد از عمل نظیر تحرک زودهنگام بر بروز ترومبوامبولی بعد از جراحی ارتوپدی اثر می‌گذارد؟

پاسخ/توصیه: نظر گروه این است که تحرک زود هنگام بروزترومبوامبولی به دنبال جراحی ارتوپدی را کاهش می‌دهد.

قدرت توصیه: متوسط

رای اعضا: موافق(99.07٪)، مخالف (0.93٪)، ممتنع (0٪) - اتفاق نظر بالا

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63. مناسب‌ترین عامل پیشگیری از ترومبوامبولی در بیمارانی که استراحت مطلق در بستر strict bed rest دارند چیست؟

پاسخ/ توصیه: مناسب‌ترین روش پیشگیری ضد انعقاد در کسانی که استراحت مطلق در بستر دارند مشخص نیست. ترکیبی از روش‌های مکانیکال و دارویی ضد انعقاد نظیرintermittent pneumatic device ممکن است برای بیماران با استراحت مطلق در بستر در نظر گرفته شوند.

قدرت توصیه: محدود

رای اعضا: موافق (96.60٪)، مخالف (1.94٪)، ممتنع (1.46٪) - اتفاق نظر بالا

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64. آیا جایی برای وسایل فشار متناوب به عنوان روش پیشگیری ضدانعقاد در بیمارانی که تحت جراحی ارتوپدی قرار می گیرند وجود دارد؟

بله روش‌های فشار متناوب منجر به حفاظت از ترومبوامبولی بعد از انجام جراحی ارتوپدی می‌شوند. استفاده از این وسایل به عنوان روشی موثر برای پیشگیری از ترومبوامبولی ثابت شده است.

قدرت توصیه: متوسط

رای اعضا: موافق (95.81٪)، مخالف (3.26٪)، ممتنع (0.93٪) - اتفاق نظر بالا

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65. آیا پمپ پا به عنوان وسیله فشار متناوب اندام تحتانی برای پیشگیری از ترومبوامبولی موثر است؟

پاسخ/توصیه: پمپ پا در صورتی که همراه با داروهای ضد انعقاد استفاده شود به اندازه وسیلع فشار متناوب اندام تحتانی در پیشگیری از ترومبوامبولی موثر است.

قدرت توصیه: متوسط

رای اعضا: موافق (95.07٪)، مخالف (1.97٪)، ممتنع (2.96٪) - اتفاق نظر بالا

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66. آیا جوراب فشاری compression stockinette جهت پیشگیری از ترومبوامبولی در بیمارانی که تحت جراحی ارتوپدی قرار می‌گیرند جایگاهی دارد؟

پاسخ/توصیه: جوراب فشاری الاستیک ممکن است درجاتی از محافظت در مقابل ترومبوامبولی وریدی ایجاد کند.

قدرت توصیه: متوسط

رای اعضا: موافق (87.79٪)، مخالف (8.92٪)، ممتنع (3.29٪) - اتفاق نظر بالا

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67. آیا تفاوتی بین انواع مختلف وسایل فشاری پنوماتیک متناوب وجود دارد؟

پاسخ/توصیه: شواهد موجود تفاوت بارزی از نظر نتایج بالینی بین انواع مختف وسیله فشاری پنوماتیک متناوب نشان نمی‌دهد. اپرچه ممکن است انواعی که مجهز به سنسور نظارت بر بیمار و کمپرشن متعاقب هست پذیرایی (compliance)درمان از سوی بیمار را افزایش دهند.

قدرت توصیه متوسط

رای اعضا: موافق (94.76٪)، مخالف (1.90٪)، ممتنع (3.33٪) - اتفاق نظر بالا

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68. آیا وسیله فشار مکانیکال در اندام تحتانی بیمار در صورت ترومبوز وریدی عمقی دیستال ثابت شده نباید استفاده شود؟

پاسخ/توصیه: پزشک می‌تواند وسیله فشار مکانیکال در بیمار را بعد از اثبات ترومبوز ورید عمقی دیستال مطابق با توصیه این دستورالعمل (ICM-VTE-general)در صورت همراهی با تجویز داروی ضد انعقاد ادامه دهد.

قدرت توصیه: محدود

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69. بهترین روش اجرایی قبل جراحی الکتیو ارتوپدی برای بیمارانی که داروهای ضد پلاکت مصرف می‌کنند چیست؟

پاسخ/توصیه: شواهد کافی برای توصیه به قطع یا ادامه داروی ضد انعقاد قبل جراحی الکتیو ارتوپدی وجود ندارد. مطالعات انجام شده در این باره کیفیت پایینی داشته و عمدتا به مطالعه تنها اسپرین پرداخته و داروهای ضد پلاکت دیگر نظیر کلوپیدوگرل تیکاگرلول پراسوگرل و غیره را بررسی نکرده‌اند. انجام مطالعات با کیفیت بالاتر قبل از هرگونه اظهارنظر قطعی ضروری به نظر می‌رسد.

قدرت توصیه: پایین

رای اعضا: موافق (92.02٪)، مخالف (5.16٪)، ممتنع (2.82٪) - اتفاق نظر بالا

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70. بهترین روش اجرایی قبل جراحی اورژانس ارتوپدی برای بیمارانی که داروی ضد پلاکت مصرف می‌کنند چیست؟

پاسخ/توصیه: شواهدی برای به تعویق انداختن جراحی اورژانس ارتوپدی در بیمارانی که داروی ضد پلاکت مصرف می‌کنند وجود ندارد. اگرچه مطالعات انجام شده در این زمینه کیفیت پایینی داشته و تاکنون مطالعه کارآزمایی بالینی تصادفی در این باره انجام نشده و اکثر مطالعات بر جراحی هیپ متمرکز شده. این مطالعات عمدتا بر آسپرین و کلوپیدوگرل متمرکز شده و مقالات معدودی اثر بقیه داروهای ضد پلاکت نظیر تیکاگرلول پراسوگرل و... را بررسی کرده‌اند. انجام مطالعات با کیفیت بالاتر قبل از هرگونه اظهارنظر قطعی ضروری به نظر می‌رسد.

قدرت توصیه: پایین

رای اعضا: موافق (94.84٪)، مخالف (2.82٪)، ممتنع (2.35٪) ممتنع - اتفاق نظر بالا

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71. آیا مصرف اسپرین قبل از انجام جراحی ارتوپدی باید قطع شود؟

پاسخ/توصیه: اسپرین اگر به دلیل علت مسایل قلبی عروق تجویز شده به صورت روتین قبل عمل ارتوپدی نباید قطع شود. آسپرین کاردیوپروتکتیو بوده و غیرمحتمل است که مرتبط با افزایش میزان خونریزی باشد.

قدرت توصیه: محدود

رای اعضا: موافق (97.67٪)، مخالف (2.33٪)، ممتنع (0٪) - اتفاق نظر بالا

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72. درچه زمانی قبل از انجام عمل جراحی الکتیو ارتوپدی مصرف مزمن داروهای ضد انعقاد باید خاتمه یابد؟

پاسخ/توصیه: Acenocoumarol باید 3 روز قبل قطع شوند. وارفارین و fluindioneاز 5 روز قبل وphenprocoumon از 7 روز قبل عمل الکتیو ارتوپدی باید قطع شوند. داروهای ضدانعقاد خوراکی با اثر مستقیم نظیر apixaban, edoxaban, dabigatran,وریواروکسابان باید حداقل 2 روز قبل عمل الکتیو ارتوپدی قطع شوند و قطع داروی dabigatran در بیماران با کلیرانس کراتینین کمتر از 80 ml/min باید از 1 روز زودتر و در بیماران با کلیرانس کراتینین بین 30-50 ml/min از 2-3 روز زودتر (نسبت به بقیه داروهای ضدانعقاد خوراکی با اثر مستقیم) صورت بگیرد.

قدرت توصیه: محدود

رای اعضا: موافق (94.86٪)، مخالف (2.80٪)، ممتنع (2.34٪) - اتفاق نظر بالا

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73. آیا تبدیل مصرف داروی ضد انعقاد مزمن به داروی تزریقی ضد انعقاد قبل از جراحی الکتیو ارتوپدی لازم است انجام شود؟

پاسخ/توصیه: در بیمارانی که در حال مصرف داروی ضد انعقاد مزمن به دلیل فیبریلاسیون دهلیزی غیر دریچه‌ای یا جهت پیشگیری از ترومبوامبولی وریدی هستند نباید قبل جراحی الکتیو ارتوپدی تحت انتقال (از داروی ضد انعقاد مورد استفاده) به هپارین Unfractionated یا هپارین با وزن مولکولی پایین تزریقی قرار گیرند. مطالعات با کیفیت بالای متعددی ریت بالاتر خونریزی perioperative بدون تغییر ریت ترومبوامبولی را در صورت انتقال (به مصرف داروهای ضد انعقاد تزریقی) نشان داده‌اند. برای بیمارانی که داروی ضد انعقاد خوراکی به دلیل بیماری دریچه ای قلب مصرف می‌کنند انتقال به مصرف داروی تزریقی ضد انقاد بهتر است بعد از در نظر گرفتن ریسک ترومبوامبولی در مقابل افزایش میزان خونریزی صورت گیرد. اگرچه یک مطالعه اخیر کارازمایی بالینی تصادفی بر روی 305 بیمار دریچه‌ای قلب سودی از انتقال (به داروی ضد انعقاد تزریقی) مشاهده نکرده است.

قدرت توصیه: بالا

رای اعضا: موافق (94.88٪)، مخالف (1.40٪)، ممتنع (3.72٪) - اتفاق نظر بالا

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74. آیا تفاوتی بین دوز معمول و دوز پایین آسپرین از نظر پیشگیری از ترومبوامبولی بعد از جراحی ارتوپدی وجود دارد؟

پاسخ/توصیه: به نظر می‌رسد که تفاوتی بین دوز معمول و دوز پایین آسپرین از نظر پیشگیری از ترومبوامبولی بعد از جراحی ارتوپدی وجود ندارد. اگرچه به نظر می‌رسد که دوز پایین اسپرین میزان عوارض گوارشی کمتری داشته و بهتر تحمل می‌شود.

قدرت توصیه: محدود

رای اعضا: موافق (93.87٪)، مخالف (3.30٪)، ممتنع (2.83٪) - اتفاق نظر بالا

1812. Parvizi J, Huang R, Restrepo C, Chen AF, Austin MS, Hozack WJ, Lonner JH. Low-Dose Aspirin Is Effective Chemoprophylaxis Against Clinically Important Venous Thromboembolism Following Total Joint Arthroplasty: A Preliminary Analysis. J Bone Joint Surg Am. 2017 Jan 18;99(2):91-8.
1813. Feldstein MJ, Low SL, Chen AF, Woodward LA, Hozack WJ. A Comparison of Two Dosing Regimens of ASA Following Total Hip and Knee Arthroplasties. J Arthroplasty. 2017 Sep;32(9S):S157-61.
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1819. Shohat N, Ludwick L, Goel R, Ledesma J, Streicher S, Parvizi J. Thirty Days of Aspirin for Venous Thromboembolism Prophylaxis Is Adequate Following Total Knee Arthroplasty, Regardless of the Dose Used. J Arthroplasty.
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1823. Azboy I, M Kheir M, Huang R, Parvizi J. Aspirin provides adequate VTE prophylaxis for patients undergoing hip preservation surgery, including periacetabular osteotomy. J Hip Preserv Surg. 2018 Apr 5;5(2):125-30.
1824. Hood B, Springer B, Odum S, Curtin BM. No difference in patient compliance between full-strength versus low-dose aspirin for VTE prophylaxis following total hip and total knee replacement. Eur J Orthop Surg Traumatol. 2021 May;31(4):779-83.

75. چه پروفیلاکسی ضد انعقادی باید در بیمار با حساسیت به اسپرین در نظر گرفته شود؟

پاسخ/توصیه: با توجه به ویژگی‌های مناسب اسپرین از نظر عوارض جانبی و هزینه اثربخشی بررسی‌های دقیق‌تر جهت به تایید رسیدن حساسیت به اسپرین باید صورت پذیرد. بیمارانی که بیماری تنفسی تشدید شونده با اسپرین یا واکنش مخاطی جلدی (متعاقب مصرف آسپرین) دارند می‌توانند تحت حساسیت‌زدایی قرار گیرند. در موارد نادری که بیمار حساسیت سیستمیک به اسپرین دارد حساسیت زدایی نباید انجام شود و روش‌های جایگزین برای درمان ضدانعقاد باید درنظر گرفته شود.

قدرت توصیه: محدود

رای اعضا: م.افق (92.82٪)، مخالف (5.31٪)، ممتنع (3.86٪) - اتفاق نظر بالا

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76. آیا داروهای ضدالتهابی غیر استرویدی می‌توانند جهت پروفیلاکسی ضد انعقاد در بیمارانی که تهت جراحی ارتوپدی قرار می‌گیرند استفاده شود؟

پاسخ/توصیه: شواهد کافی برای توصیه به استفاده صرف از داروهای ضدالتهابی غیراسترویدی جهت پروفیلاکسی ضد انعقاد در بیمارانی که تحت جراحی ارتوپدی قرار می‌گیرند وجود ندارد.

قدرت توصیه: محدود

رای اعضا: موافق (97.66٪)، مخالف (0.93٪)، ممتنع (1.40٪) - اتفاق نظر بالا

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77. آیا داروهای ضدالتهاب غیراسترویدی می‌توانند همزمان با مصرف آسپرین به عنوان داروی ضد انعقاد در بیمارانی که تحت پروسیجر ارتوپدی قرار می‌گیرند استفاده شوند؟

پاسخ/توصیه: مصرف داروی ضد التهاب غیراسترویدی به صورت خوراکی می‌تواند اثر ضد انعقاد اسپرین را کاهش دهد. این تداخل اثر با مصرف داروهای ضد التهاب غیراسترویدی با اثر غیراختصاصی بیشتر رخ می‌دهد. بنابراین توصیه می‌شود اسپرین حداقل 2 ساعت قبل از زمان مصرف داروهای ضد التهاب غیراسترویدی میل شود.

قدرت توصیه: متوسط

رای اعضا: موافق (89.52٪)، مخالف (3.81٪)، ممتنع (6.67٪) - اتفاق نظر بالا

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78. آیا تفاوتی بین داروهای مهارکننده فاکتور 10 از نظر اثربخشی و ایمنی در مهار ترومبوامبولی وجود دارد؟

پاسخ/نوصیه: شواهد کافی جهت مقایسه اثربخشی مهارکننده‌های متفاوت فاکتور 10 به عنوان پروفیلاکسی ضد انعقاد وجود ندارد.

قدرت توصیه: محدود

رای اعضا: موافق (92.52٪)، مخالف (4.21٪)، ممتنع (3.27٪) - اتفاق نظر بالا

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79. آیا تست آزمایشگاهی مشخصی جهت مانیتورینگ اثر مهارکننده فاکتور 10 حین استفاده ان به عنوان پروفیلاکسی ضد انعقاد وجود دارد؟

پاسخ/توصیه: تست partial thromboplastin time (PTT) activated جهت مانیتورینگ اثر هپارین Unfractionated و تست prothrombin time (PT) جهت مانیتورینگ اثر انتاگونیست ویتامین k می تواند استفاده شود. هیچکدام از این دو تست نمی‌تواند جهت مانیتور اثر مهارکننده‌های فاکتور 10 استفاده شوند. تست chromogenic anti factor 10 assay می‌تواند به صورت تکرارپذیری جهت مانیتور اثر مهارکننده فاکتور 10 در سرم یا پلاسما به کار رود. برای اثردرمانی یا پیشگیری هیچ محدوده درمانی (therapeutic range) جهت تست anti-factor 10 assay مشخص نشده است.

قدرت توصیه: محدود

رای اعضا: موافق (93.84٪)، مخالف (1.42٪)، ممتنع (4.74٪) - اتفاق نظر بالا

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80. آیا وارفارین می‌تواند منجر به افزایش انعقادپذیری در اوایل مصرف آن شود؟

پاسخ/ توصیه: شواهد موجود به نفع افزایش موقت انعقادپذیری در هنگام شروع استفاده وارفارین هستند.

قدرت توصیه: متوسط

رای اعضا: موافق (90.95٪)، مخالف (1.43٪)، مخالف (7.62٪) - اتفاق نظر بالا

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81. آیا امکان انجام bridging با یک ضد انعقادِ درمانی بعد جراحی ارتوپدی وقتی که وارفارین به عنوان پروفیلاکسی در حالا ستفاده است می‌باشد؟

پاسخ/توصیه: بیمارانی که تحت عمل الکتیو ارتوپدی قرار می‌گیرند و در حال دریافت وارفارین هستند نباید به طور روتین با UFH یا LMWH بریج شوند. در بیماران با بیماری زمینه‌ای مثل دریچه مکانیکال قلبی که ریسک حادثه ترومبوآمبولیک برریسک خونریزی غلبه می‌کند، بریج می‌تواند در نظر گرفته شود.

قدرت توصیه : محدود

رای نمایندگان: موافق (91.94٪)، مخالف (3.32٪)، ممتنع (4.74٪) - اجماع عمومیقوی

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82. آیا اختلافی بین انواع داروهای تزریقی جهت پروفیلاکسی VTE با توجه به پروفایل عملکرد و ایمنی وجود دارد؟

پاسخ/توصیه: در مقایسه با UFH و LMWH، فونداپارینوکس برای پروفیلاکسی از VTE بعد عمل ارتوپدی پروفایل عملکردی بهتری دارد. بر اساس شواهد فعلی هیچ تفاوتی از نظر پروفایل ایمنی داروهای تزریقی در مورد ریسک خونریزی در حول زمان جراحی وجود ندارد.

قدرت توصیه: متوسط رای نمایندگان: موافق (۹۱٫۱۲٪)، مخالف (6.07٪)، ممتنع (۲٫۸۰٪) - اجماع عمومیقوی

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83. بهترین زمان شروع LMWH به عنوان پروفیلاکسی VTE در بیماری که تحت عمل جراحی ارتوپدی قرار می‌گیرد چه زمانی است؟

پاسخ/توصیه: بهترین زمان شروع LMWH به عنوان پروفیلاکسی VTE در بیماری که تحت عمل جراحی ارتوپدی قرار می‌گیرد ۱۲ تا ۴۲ ساعت بعد از جراحی است. اگرچه شواهد با کیفیت بالا دچار کمبود است، چندین مطالعه نشان داده‌اند که هنگامی که LMWH قبل عمل یا با فاصله کمی بعد عمل تجویز شود فرد دچار افزایش ریسک خونریزی بعد عمل می‌شود. نگرانی‌ها در مورد زود شروع کردن LMWH در بیماران anesthesia neuraxial وجود دارد. بنظر می‌رسد تفاوتی میان شروع کردن LMWH قبل عمل و تا ۱۲ ساعت بعد عمل وجود ندارد.

زمان‌بندی دقیق یک پروسیجر خاص، بطور خاص بیماران ترومایی یا افرادی که در ریسک VTE هستند باید در ارتباط با فارماکوکینتیک LMWH انتخابی، جراح/ متخصص بیهوشی و بیماری‌های زمینه‌ای فرد باشد.

قدرت توصیه : محدود

رای نمایندگان : موافق (97.67٪)، مخالف (۰٫۹۳٪)، ممتنع (1.40٪) - اجماع عمومیقوی

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84. آیا دوز LMWH جهت جلوگیری از VTE باید بر اساس وزن بیمار تنظیم شود؟

پاسخ/توصیه: داده‌های محدودی نشان از آن می‌دهند که تنظیم دوز LMWH بر اساس وزن فرد ممکن است در پروفیلاکسی VTEدر بیماران بسیار کم وزن و بیماران چاق تاثیر گذار باشد.

قدرت توصیه : محدود

رای نمایندگان: موافق (95.33)، مخالف (۲٫۸۰٪)، ممتنع (۱٫۸۷٪) - اجماع عمومیقوی

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85. آیا تزریق پروفیلاکسی VTE به بیماری که تحت اعمال ارتوپدی قرار می‌گیرد سبب افزایش عوارض غیر VTEبعد از عمل می‌شود؟

پاسخ/توصیه: تزریق دارویی پروفیلاکسی VTEبه بیماری که تحت عمل total hip arthroplastyوtotal knee arthroplasty قرار می‌گیرند سبب افزایش رخداد عوارض خونریزی بعد عمل می‌شود. آسپرین کمترین ریسک را دارد. مقاله در مورد بقیه انواع عمل ارتوپدی قابل نتیجه‌گیری نیست.

قدرت توصیه: قوی

رای نمایندگان: موافق (95.77٪)، مخالف (۱٫۸۸٪)، ممتنع (۵۲٫۳٪) - اجماع عمومیقوی

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86. آیا تزریق پروفیلاکسی VTE سبب افزایش ریسک خونریزی درون جمجمه‌ای در بیماری که تحت اعمال ارتوپدی قرار میگیرد می‌شود؟ اگر چنین است آیا تفاوتی بین مواد پروفیلاکسی مختلف از ین حیث وجود دارد؟

پاسخ/توصیه: یک ارتباط شناخته شده بین استفاده از داروهای ضدترومبوز و ریسک خونریزی داخل جمجمه‌ای در بیمارانی که درمان طولانی مدت با آنها دارند وجود دارد. خونریزی داخل جمجمه‌ای با شیوع کمتر در بیمارانی که تحت اعمال ارتوپدی قرار می‌گیرند گزارش شده احتمالا بدلیل استفاده بمدت کوتاه‌تر از داروهای ضد ترومبوز می‌باشد. رخداد خونریزی داخل جمجمه‌ای بنظر می‌رسد با مصرف آنتاگونیست ویتامین K بیشتر است.

قدرت توصیه: محدود

رای نمایندگان: موافق (۹۰٫۲۹٪)، مخالف (1.46٪)، ممتنع (8.25٪) - اجماع عمومیقوی

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87. آیا تزریق پروفیلاکسی VTE سبب افزایش ریسک هماتوم اپیدورال در بیماری که تحت اعمال ارتوپدی قرار می‌گیرد می‌شود؟ اگر چنین است آیا تفاوتی بین مواد پروفیلاکسی مختلف ازین حیث وجود دارد؟

پاسخ/توصیه : هماتوم اپیدورال یک عارضه نادر اما جدی neuraxial anesthesia است. پروفیلاکسی VTEبرای total joint arthroplasty مرتبط است با بروز هماتوم اپیدورال و LMWH بیشترین ریسک بروز هماتوم اپیدورال را در مقابل بقیه موادی که در حال حاضر مصرف میشود دارد. هماتوم اپیدورال همچنین با ضدانعقادهای با عملکرد مستقیم از طریق خوراکی DOAC ارتباط دارد.

قدرت توصیه: متوسط

رای نمایندگان : موافق (96.17٪)، مخالف (۱٫۹۱٪)، ممتنع (۱٫۹۱٪) - اجماع عمومیقوی

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88. آیا ریسک مشکلات زخم بعد عمل جراحی در بیمارانی که تحت اعمال ارتوپدی قرار می‌گیرند بین انواع مواد پروفیلاکسی VTE فرق می‌کند؟

پاسخ/توصیه: بله، آسپرین دارای ریسک کمتر زخم بعد جراحی در مقایسه با بقیه مواد شیمیایی پروفیلاکتیک می‌شود.

قدرت توصیه: محدود

رای نمایندگان: موافق (94.37)، مخالف (۲٫۸۲٪)، ممتنع (۲٫۸۲٪) - اجماع عمومیقوی

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89. آیا پروفیلاکسی VTE در بیمارانی که تحت عمل جراحی ارتوپدی قرار می‌گیرند و مشکلات مرتبط با زخم جراحی پیدا می‌کنند لازم است تغییر کند؟

پاسخ/توصیه: بله. توصیه می‌شود ضد انعقاد ادامه داده شود یا با یک ضد انعقاد با قدرت کمتر جایگزین شود در موارد مشکلات مرتبط با زخم مثل درناژ پایدار زخم، خونریزی یا تشکیل هماتوم.

قدرت توصیه: پایین

رای نمایندگان: موافق (96.23٪)، مخالف (۱٫۸۹٪)، ممتنع (۱٫۸۹٪) - اجماع عمومیقوی

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90. آیا دچار شدن به هماتوم بدلیل تزریق پروفیلاکسی VTE سبب افزایش ریسک فیبروز شریانی می‌شود؟

پاسخ/توصیه: جهت ارتباط دادن پروفیلاکسی VTE با فیبروز شریانی دچار کمبود داده هستیم. یک مطالعه گذشته نگر نشان داده که بیمارانی که طی عمل ترمیم رباط صلیبی قدامی قرار می‌گیرند و با ماده‌ای غیر از آسپرین تحت پروفیلاکسی VTE قرار می‌گیرند در مقایسه با بیمارانی که هیچ پروفیلاکسی نمی‌گیرند در معرض افزایش خطر لیز چسبندگی‌ها و یا دستکاری تحت بیهوشی قرار دارند.

قدرت توصیه: محدود

رای نمایندگان: موافق (۸۸٫۷۸٪)، مخالف (4.88٪)، ممتنع (6.34٪) - اجماع عمومیقو

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فصل دوم

جراحی پا و مچ پا

مترجم:

دکترنجفی

جراحی پا و مچ

1. آیا بیمارانی که تحت دبریدمان جراحی زخم دیابتیک فوت قرار می گیرند بایستی به صورت روتین پروفیلاکسی VTE دریافت کنند؟

پاسخ/توصیه: در هر حال حاضر بر اساس اطلاعات موجود شواهدی وجود ندارد که بیمارانی که تحت دبریدمان جراحی زخم دیابتیک فوت قرار می‌گیرند نیاز به پروفیلاکسی VTE دارند. البته میزان موربیدیتی و مورتالیتی در بیماران زخم دیابتی که دچار VTE می‌شوند بیشتر است. بنابراین پیشنهاد به این صورت تغییر داده می‌شود که بیماران زخم پای دیابتی پروفیلاکسی داده می‌شود اگر بیماری زمینه‌ای داشته باشند و یا محدودیت حرکتی داشته باشند. تجویز پروفیلاکسی برای تمام این بیماران که تحت جراحی قرار می‌گیرند بدون اینکه مداخله دیگری انجام شود و محدودیت وزن‌گذاری طولانی نداشته باشد صادق نیست.

قدرت توصیه: محدود

رای نمایندگان: موافق (100٪)، ممتنع (0٪)، مخالف (0٪) – اجماع عمومیقوی به اتفاق آرا

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2. آیا پروفیلاکسی VTE برای بیمارانی که برای آنها بی‌حرکتی در واکر بوت در نظر گرفته می‌شود لازم است؟

پاسخ/توصیه: بیمارانی که در واکر بوت بی حرکت می شوند ممکن است در خطر بیشتری برای VTE باشند. این بیماران بایستی از نظر ریسک VTE ارزیابی شوند و توصیه به پروفیلاکسی بایستی موردی باشد.

قدرت توصیه: متوسط

رای نمایندگان: موافق (96.3٪)، ممتنع (0٪)،مخالف (3.7٪) – اجماع عمومیقوی

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3. آیا وضعیت وزن‌گذاری بیماران پس از اعمال جراحی فوت وانکل در انتخاب پروفیلاکسی VTE موثر است؟

پاسخ/توصیه: عدم وزن‌گذاری اندام تحتانی یک ریسک فاکتور مستقل برای VTEاست. تحمل وزن بیش از 50٪ اندامی که تحت عمل جراحی قرار گرفته است این ریسک را تقلیل می‌دهد. در حال حاضر با شواهد موجود نتیجه‌گیری دیگری در مورد انتخاب نوع پروفیلاکسی براساس عدم وزن‌گذاری نمی‌توان کرد.

قدرت توصیه: محدود

رای نمایندگان: موافق (100٪)، ممتنع (0٪)، مخالف (0٪) – اجماع عمومیقوی به اتفاق آرا

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4. از جنبه کدام جراحی فوت وانکل ماژور و کدام غیر ماژور در نظر گرفته می‌شود؟

پاسخ/توصیه: اطلاعات موجود برای اینکه عمل‌های جراحی فوت وانکل را بر اساس خطر پس از عمل به ماژور و غیرماژور تقسیم کند ناکافی است. برخی تشخیص‌های خاص مثل پارگی تاندون آشیل با افزایش ریسک VTE همراه هستند که به نظر می‌رسد مستقل از درمان جراحی و یا غیر جراحی باشد و بیشتر به مختل شدن بازگشت وریدی مرتبط است.

قدرت توصیه: متوسط

رای نمایندگان: موافق (100٪)، ممتنع (0٪)، مخالف (0٪) – اجماع عمومیقوی به اتفاق آرا

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5. آیا پروفیلاکسی VTE روتین برای بیمارانی که عمل جراحی فورفوت و میدفوت می‌شوند و پس از عمل اجازه وزن‌گذاری کامل خواهند داشت توصیه لازم است؟

پاسخ/توصیه: خطر بروز VTE پس از جراحی فورفوت و میدفوت خیلی کم است. آمبولی ریه خیلی کمتر و آمبولی کشنده ریه بسیارنادر است. ما پروفیلاکسی VTE روتین را برای جراحی‌های فورفوت و میدفوت توصیه نمی‌کنیم به خصوص که امکان وزن‌گذاری بعد از عمل داشته باشند. ما

تشویق به انجام تحقیقات با کیفیت بالا در مورد پروفیلاکسی VTE روتین می‌کنیم.

قدرت توصیه: محدود

رای نمایندگان: موافق (100٪)، ممتنع (0٪)، مخالف (0٪) – اجماع عمومیقوی به اتفاق آرا

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6. آیا پروفیلاکسی VTE روتین برای ترمیم تاندون آشیل توصیه می‌شود؟

پاسخ/توصیه: در غیاب شواهد مطغن ما پروفیلاکسی (مکانیکال یا دارویی) برای بیماران با ریسک بالا را بر اساس طبقه‌بندی ریسک توصیه می‌کنیم. مگر اینکه کنترا اندیکاسیون داشته باشد. پروفیلاکسی VTE روتین در ترمیم تاندون آشیل توصیه نمی‌شود.

قدرت توصیه: ضعیف

رای نمایندگان: موافق (100٪)، ممتنع (0٪)، مخالف (0٪) – اجماع عمومیقوی به اتفاق آرا

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7. آیا جایگاهی برای پروفیلاکسی در بیماران فیوژن انکل ویا هیندفوت وجود دارد؟

پاسخ/توصیه: خطر بروز VTE پس از فیوژن هیند فوت ویا انکل خیلی کم است. آمبولی ریه خیلی کمتر و آمبولی کشنده ریه بسیارنادر است. ما پروفیلاکسی روتین VTE را برای جراحی‌های فیوژن انکل و هیند فوت الکتیو در بیماران کم ریسک را توصیه نمی‌کنیم. ما تشویق به انجام تحقیقات با کیفیت بالا در مورد پروفیلاکسی VTE روتین می‌کنیم.

قدرت توصیه: محدود

رای نمایندگان: موافق (96.3٪)، ممتنع (0٪)، مخالف (3.7٪) – اجماع عمومیقوی

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پاسخ/توصیه: اطلاعات موجود درمورد پروفیلاکسی VTE در تعویض مفصل انکل کنتراورسی است. ریسک بروز در تعویض مفصل انکل به مراتب کمتر از زانو وهیپ است ولی قابل اغماض هم نیست. گروهی از بیماران که سابقه قبلی دارند یا ترومبوفیلیا دارند ممکن است از کموپروفیلاکسی VTE سود ببرند. اثر بی‌حرکتی طولانی مدت زیر زانو و یا عدم وزن‌گذاری و سود و زیان کموپروفیلاکسی VTE حوالی زمان عمل بایستی در این بیماران بیشتر بررسی شود.

قدرت توصیه: محدود

رای نمایندگان: موافق (100٪)، ممتنع (0٪)، مخالف (0٪) – اجماع عمومیقوی به اتفاق آرا

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فصل سوم

جراحی دست

مترجم:

دکتر وثوقی

جراحی دست

1. با توجه به خطر ترومبوامبولی چه انواعی از جراحی دست می‌تواند اصلی و چه جراحی‌هایی می‌توانند غیر اصلی در نظر گرفته شود؟

پاسخ/توصیه: عمل‌هایی با زمان بیهوشی عمومی بیشتر از 90 دقیقه جراحی‌هایی که نیاز به استراحت در بستر یا محدودیت تحرک بعد از عمل دارند و جراحی پیوند یا انتقال بافت واسکولار ازاد می‌بایست در رشته جراحی دست اصلی در نظر گرفته شود.

قدرت توصیه: براساس توافق نظر (consensus)

رای اعضا: موافق (90.48٪)، مخالف (4.76٪)، ممتنع (4.76٪) - اتفاق نظر بالا

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2. ایا پیشگیری روتین در برابر انعقاد در بیمارانی که تحت جراحی مچ دست قرار می‌گیرند نیاز است؟

پاسخ/توصیه: پیشگیری روتین در برابر انعقاد در بیمارانی که تحت جراحی مچ دست قرار می‌گیرند نیاز نیست در بیمارانی که سابقه خانوادگی قوی ترومبوامبولی داشته یا قادر به تحرک قبل یا بعد از انجام جراحی نیستند می‌بایست درنظر گرفته شود.

قدرت توصیه: محدود

رای اعضا: موافق (95.45٪)، مخالف (0٪)، ممتنع (4.55٪) - اجماع عمومیبالا

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3. آیا پیشگیری از ترومبوامبولی روتین در بیمارانی که تحت جراحی انگشت قرار می‌گیرند نیاز است؟

پاسخ/توصیه: پیشگیری از ترومبوامبولی روتین در بیمارانی که تحت جراحی انگشت یا شست قرار می‌گیرند نیاز نیست در بیمارانی که تحت پیوند انگشت یا جراحی میکروواسکولار طولانی قرار می‌گیرند پیشگیری ترومبوامبولی ممکن است اندیکاسیون یابد.

قدرت توصیه: محدود

رای اعضا: موافق (90.91٪)، مخالف (4.55٪)، ممتنع (4.55٪) - اجماع عمومیبالا

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4. آیا داروی ضد انعقاد قبل از جراحی دست و مچ دست باید قطع شود؟

پاسخ/ توصیه: داروی ضد انعقاد و ضد پلاکت در بیماری که تحت جراحی دست و مچ دست قرار می‌گیرد نیازی به قطع ندارد به خصوص بیماران با خطر بالای ترومبوامبولی یا بیمارانی که تحت جراحی تونل کارپ قرار می‌گیرند.

قدرت توصیه: متوسط

رای اعضا: موافق (90.91٪)، مخالف (4.55٪)، ممتنع (4.55٪) - اجماع عمومیبالا

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فصل چهارم

هیپ و زانو

مترجمین:

دکتر مرتضوی
دکتر پارسا
دکترنجفی
دکتر قضاوی

هیپ و زانو

1. آیا استفاده از ماشین پاسیو مداوم (CPM) خطر ابتلا به VTE را به دنبال جراحی زانو کاهش می‌دهد؟

پاسخ/توصیه: هیچ شواهد قطعی مبنی بر کاهش خطر ترومبوآمبولی وریدی (VTE) با استفاده از ماشین پاسیو مداوم (CPM)، به دنبال جراحی زانو وجود ندارد. سه مطالعه با کیفیت متوسط هیچ تفاوتی را در خطر VTE در جراحی زانو با استفاده از حرکت غیرفعال مداوم نشان نمی‌دهند، پنج مطالعه با کیفیت پایین احتمال کاهش خطر VTE را نشان می‌دهد.

قدرت توصیه: محدود.

رای نمایندگان: موافق (95.69٪)، مخالف (3.45٪)، ممتنع (0.86٪) - اجماع عمومیقوی

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2. آیا مفهوم "enhanced recovery" که شامل حرکت زودهنگام می‌شود، خطر ابتلا به VTE را در بیمارانی که تحت عمل جراحی آرتروپلاستی کامل هیپ یا زانو قرار می‌گیرند، کاهش می‌دهد؟

پاسخ/توصیه: مفهوم "بازیابی پیشرفته" از جمله تحرک زودهنگام احتمالاً خطر ترومبوآمبولی وریدی (VTE) را در بیمارانی که تحت آرتروپلاستی کامل اولیه هیپ (THA) یا آرتروپلاستی کامل زانو (TKA) قرار می‌گیرند، کاهش می‌دهد. با این حال، ادبیات فاقد مطالعات با سطح بالایی از شواهد با توجه به این موضوع است.

قدرت توصیه: محدود.

رای نمایندگان: موافق (96.58٪)، مخالف (1.71٪)، ممتنع (1.71٪) - اجماع عمومیقوی

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3. آیا بیمارانی که تحت استئوتومی الکتیو لگن و/یا فمورال قرار می‌گیرند به پروفیلاکسی روتین VTE نیاز دارند؟

پاسخ/توصیه: با توجه به میزان کم ترومبوآمبولی وریدی (VTE) در بیمارانی که تحت استئوتومی انتخابی لگن و/یا فمورال قرار می‌گیرند، و همچنین عدم وجود داده‌های قوی در ادبیات فعلی، این گروه کاری توصیه می‌کند که آسپرین (ASA) و/یا پیشگیری مکانیکی باید به عنوان پروفیلاکسی VTE در این جمعیت بیمار استفاده شود. فقط به بیمارانی که در معرض خطر بالای VTE هستند باید کموپروفیلاکسی قوی‌تر یا اضافی داده شود.

قدرت توصیه: محدود.

رای نمایندگان: موافق (86.32٪)، مخالف (10.26٪)، ممتنع (3.42٪) - اجماع عمومیقوی

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4. علائم سونوگرافی داپلر اندام تحتانی برای تایید یا رد DVT چیست؟

پاسخ/توصیه: در صورت عدم وجود هر گونه راهنمایی خاص از متون، پیشنهاد می‌کنیم که در هر بیماری که ظرف 6 هفته پس از جراحی اندام تحتانی است، اسکن داپلر در موارد زیر درخواست شود:

آ. تورم اندام تحتانی وجود دارد که به ارتفاع یا پس از استراحت شبانه در رختخواب پاسخ نمی‌دهد.

ب. تورم اندام تحتانی پس از یک شب درازکش بدتر می‌شود.

ج. در بیماران مبتلا به سرطان فعال و/یا سابقه ترومبوآمبولی وریدی قبلی (VTE) شاخص بالایی از سوء ظن برای ترومبوز وریدی عمقی (DVT) وجود دارد.

قدرت توصیه: محدود.

رای نمایندگان: موافق (89.57٪)، مخالف (6.09٪)، ممتنع (4.35٪) - اجماع عمومیقوی

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5. در صورت وجود DVT دیستال در یک اندام آیا تکرار تصویربرداری از وریدهای پروگزیمال الزامی است؟

پاسخ/توصیه: بر اساس ادبیات فعلی و توصیه‌های ارگان‌های رسمی، بیماران مبتلا به ترومبوز ورید عمقی دیستال ایزوله (DVT) را (که جزء پروگزیمال در اسکن اولیه تشخیص داده نشد)، می‌توان بدون ضد انعقاد مدیریت کرد، اما نیاز به پیگیری دارد. سونوگرافی (US) وریدهای پروگزیمال را بعد از 1 هفته برای رد کردن گسترش DVT انجام دهید. درمان تجربی بیمار با داروهای ضد انعقاد معقول است، به خصوص در شرایطی که ممکن است سونوگرافی بعدی امکان‌پذیر نباشد.

نقطه قوت توصیه: اجماع.

رای نمایندگان: موافق (89.57٪)، مخالف (6.09٪)، ممتنع (4.35٪) - اجماع عمومیقوی

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6. آیا بیمارانی که تحت UKA از جمله آرتروپلاستی مفصل کشکک رانی قرار می‌گیرند، پروفایل خطر VTE متفاوتی با TKA دارند؟

پاسخ/توصیه: بروز ترومبوآمبولی وریدی علامتی (VTE) در بیماران آرتروپلاستی تک بخش زانو (UKA) و آرتروپلاستی کامل زانو (TKA) کم است، ترومبوز وریدی عمقی (DVT) تا 6 درصد بیماران UKA رخ می‌دهد و آمبولی ریوی (PE) در حداکثر 0.13٪ از بیماران UKA. بیشتر مطالعاتی که کاهش خطر VTE را به دنبال UKA در مقایسه با TKA داشتند، ضعیف بودند، فقط مطالعات رجیستری به اندازه کافی قدرت داشتند و نسبت خطر VTE (RR) را 0.39 (0.27 - 0.57) نشان دادند. اطلاعات کمی در مورد آرتروپلاستی مفصل پاتلوفمورال (PFJA) و خطر VTE وجود دارد.

نقطه قوت توصیه: متوسط.

رای نمایندگان: موافق (96.49٪)، مخالف (0.88٪)، ممتنع (2.63٪) - اجماع عمومیقوی

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فصل پنجم

انکولوژی

مترجم:

دکتر نجفی

انکولوژی

1. خطر کلی VTE در این بیماران چیست؟ و چه عواملی باعث افزایش خطر VTE در این موارد می‌شود؟ (VTE درمتاستاز استخوانی)

ب. وقتی که برای این بیماران خطر خونریزی نیز در نظر گرفته شود، پروتکل بهینه‌ی پیشگیری از VTE چیست؟

پاسخ/توصیه: بیمارانی که به دلیل بیماری متاستاتیک استخوان تحت فیکساسیون پیشگیرانه یا تثبیت شکستگی پاتولوژیک قرار می‌گیرند، در معرض خطر بالایی برای ایجاد ترومبوآمبولی وریدی (VTE) هستند. عوامل خطر شامل ویژگی‌های بیمار مانند سن و بیماری‌های همراه و همچنین وسعت جراحی و مدت زمان جراحی است. در صورت عدم وجود موارد منع مصرف، برای بیمارانی که تحت عمل جراحی قرار می‌گیرند یا بیماران بستری در بیمارستان باید ترومبوپروفیلاکسی با یا بدون پروفیلاکسی مکانیکی تجویز شود. در حال حاضر ما شواهد کافی برای ارائه توصیه‌های خاص برای این نوع ترومبوپروفیلاکسی نداریم.

قدرت توصیه: محدود.

رای نمایندگان: موافق (92.31٪)، مخالف (0.0٪)، ممتنع (7.69٪) - اجماع عمومیقوی

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2. برای بیماران با تومورهای اولیه استخوان/سارکوم

الف. خطر کلی VTE در این جمعیت بیمار چیست و چه عواملی باعث افزایش خطر VTE در این جمعیت بیمار می شود؟

ب. با در نظر گرفتن خطر خونریزی، پروتکل بهینه پیشگیری از VTE در این جمعیت بیمار چیست؟

پاسخ/توصیه: بیمارانی که تحت عمل جراحی سارکوم قرار می‌گیرند، در معرض خطر بالای ترومبوآمبولی وریدی (VTE) با چندین عامل خطر مشترک مرتبط با جمعیت بیمار، جراحی و عوارض هستند. بیماران باید با هپارین با وزن مولکولی کم (LMWH) یا آسپرین (ASA) پروفیلاکسی داشته باشند، مگر اینکه خطر خونریزی بسیار بالا باشد که پنوماتیک کمپرشن اضافه می‌شود.

قدرت توصیه: محدود.

رای نمایندگان: موافق (92.31٪)، مخالف (7.69٪)، ممتنع (0.0٪) - اجماع عمومیقوی

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3. چه جراحی‌های ارتوپدی مرتبط با تومور نیاز به پروفیلاکسی معمول دارند؟

پاسخ/توصیه: بیمارانی که تحت عمل‌های برداشتن متاستاز استخوان یا روش‌هایی که شامل بازسازی پروتز می‌شوند، در معرض خطر ترومبوآمبولی وریدی هستند و نیاز به پروفیلاکسی معمول دارند.

قدرت توصیه: محدود.

رای نمایندگان: موافق (100.0٪)، مخالف (0.0٪)، ممتنع (0.00٪) - اجماع عمومیقوی به اتفاق آرا

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4. پروتکل‌های پروفیلاکسی VTE چگونه باید برای ترمیم جراحی شکستگی‌های پاتولوژیک یا جراحی ارتوپدی در بیمار با سابقه بدخیمی یا بدخیمی همزمان تنظیم شود؟

پاسخ/توصیه: بیمارانی که تحت ترمیم جراحی شکستگی‌های پاتولوژیک قرار می‌گیرند یا افرادی که تحت عمل جراحی ارتوپدی با سابقه بدخیمی یا بدخیمی همزمان قرار می‌گیرند، در معرض خطر بالایی برای ایجاد ترومبوآمبولی وریدی (VTE) هستند. در حالی که دستورالعمل‌ها ممکن است برخی از راهنمایی ها را از نظر انتخاب عامل شیمیایی و مدت زمان ارائه دهند، پایگاه شواهد فعلی در تعیین استراتژی‌های پیشگیری بهینه کافی نیست، به ویژه با توجه به عواملی که ممکن است بر خطر VTE در این جمعیت پرخطر مانند محل تومور اولیه تأثیر بگذارد.

قدرت توصیه: محدود.

رای نمایندگان: موافق (92.86٪)، مخالف (7.14٪)، ممتنع (0.0٪) - اجماع عمومیقوی

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فصل ششم

اطفال

مترجم:

دکتر پارسا

اطفال

1. آیا ریسک فاکتورهای حوادث ترومبوآمبولیک پس از اعمال ارتوپدی در بالغین واطفال متفاوت است؟

توصیه/پاسخ: بسیاری ریسک فاکتورهای ترومبوآمبولی در کودکان مشابه بالغین است. شامل سن بالاتر (نوجوانان)، تروما، بدخیمی، عفونت‌های خاص، اختلالات انعقادی و سابقه فامیلی ترومبوآمبولی.

اگرچه برخی ریسک فاکتورهای بالغین مثل سیگار کشیدن ممکن است شیوع کمتری در کودکان داشته باشد و بالعکس مثل ترومبوفیلی مادرزادی

قدرت توصیه: متوسط

رای نمایندگان: موافق (100٪)، ممتنع (0.00٪)، مخالف (0.00٪) – اجماع عمومیقوی

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2. آیا روش‌های طبقه‌بندی خطر برای ترومبوآمبولی کودکانی که تحت جراحی‌های ارتوپدی قرار می‌گیرند وجود دارد؟

توصیه/پاسخ: نوجوانان، کاتتر وریدی مرکزی، تروما، چاق و مصرف ضد بارداری‌های خوراکی شایع‌ترین فاکتورهای خطر در کودکان بیماری هستند که تحت عمل‌های جراحی ارتوپدی قرار می‌گیرند.

قدرت توصیه: متوسط

رای نمایندگان: موافق (100٪)، ممتنع (0.00٪)، مخالف (0.00٪) – اجماع عمومیقوی

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3. در اطفالی که تحت عمل جراحی ارتوپدی قرار می‌گیرند، آیا جنسیت و یا بلوغ اسکلتی تاثیری در انتخاب نوع پروفیلاکسی ترومبوآمبولی دارد؟

توصیه/پاسخ: جنسیت نقشی در انتخاب نوع پروفیلاکسی ندارد. البته سن بیشتر از 13 سال از تجویز پروفییلاکسی ترومبوآمبولی ممکن است سود ببرند.

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4. آیا پروفیلاکسی روتین برای کودکان با بیماری نروموسکولارمزمن لازم است؟

توصیه/پاسخ: خطر کلی بروز ترومبوآمبولی در بیماران با بیماری نروموسکولار مزمن خیلی پایین است.

پروفیلاکسی روتین ترومبوآمبولی در این بیماران توصیه نمی شود مگر ریسک فاکتورهای دیگری وجود داشته باشند.

قدرت توصیه: متوسط

رای نمایندگان: موافق (100٪)، ممتنع (0.00٪)، مخالف (0.00٪) – اجماع عمومیقوی

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5. آیا کودکانی که برای آنها بی حرکتی اندام تحتانی با گچ انجام شده است نیاز به پروفیلاکسی ترومبوآمبولی دارند؟

توصیه/پاسخ: پروفیلاکسی روتین ترومبوآمبولی در کودکان با گچ اندام تحتانی توصیه نمی‌شود. به علاوه سن کم کودکان در بروز ترومبوز وریدی اثر محافظتی دارد. برخلاف بزرگسالان که رابطه بین گچگیری اندام تحتانی و بروز ترومبوز وریدی وجود دارد چنین یافته‌هایی برای کودکان وجود ندارد. به علت خطر کم تشکیل ترومبوز وریدی در کودکان با گچگیری، تجویزپروفیلاکسی در آن‌ها توصیه نمی‌شود. اگرچه توصیه واضحی برای کودکانی که بیش از سه ریسک فاکتور ترومبوز دارند هم وجود ندارد.

قدرت توصیه: ضعیف

رای نمایندگان: موافق (100٪)، ممتنع (0.00٪)، مخالف (0.00٪) – اجماع عمومیقوی

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6. آیا راه اندازی سریع و/یا به کارگیری دستگاه‌های پنوماتیک متناوب برای کاهش پروفیلاکسی حوادث ترومبوآمبولی در کودکانی که از سایر لحاظ سالم هستند و تحت عمل جراحی ارتوپدی قرار می‌گیرند کافی است؟

توصیه/پاسخ: با در نظر گرفتن نادر بودن بروز حوادث ترومبوآمبولیک در کودکان و نوجوانان سالمی که تحت عمل جراحی انتخابی ارتوپدی قرار می‌گیرند، راه اندازی سریع یا/و وسایل مکانیکال متناوب برای پروفیلاکسی کافی است.

اگرچه در کودکانی که ترومای ماژور داشته‌اند یا تحت عمل‌های جراحی بازسازی عمده قرار می‌گیرند، بی حرکتی طولانی‌تر و مراقبت ویژه نیاز دارند. در این بیماران معمولا اضافه شدن پروفیلاکسی دارویی را بایستی درنظر داشت.

قدرت توصیه: متوسط

رای نمایندگان: موافق (100٪)، ممتنع (0.00٪)، مخالف (0.00٪) – اجماع عمومیقوی

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7. از نظر بررسی حوادث ترومبوآمبولیک کدام جراحی‌ها درارتوپدی اطفال ماژور و کدام غیر ماژور در نظر گرفته می‌شوند؟

پاسخ/توصیه: به طور کلی خطر بروز حوادث ترومبوآمبولیک وریدی در اطفال پایین است. در کودکانی که تحت درمان عفونت‌های خاص سیستم موسکولواسکلتال قرار می‌گیرند (استاف اورئوس مقاوم به متیسیلین (MRSA) با پنتون – ولنتین لکوسیدین مثبت(PVL)).

جراحی‌های هیپ، اسپاین و اسپورت ریسک بالاتری دارند. به علاوه ریسک ترومبوآمبولی در نوجوانان بالاتر است.

قدرت توصیه: متوسط

رای نمایندگان: موافق (93.97٪)، ممتنع (2.59٪)، مخالف (3.45٪) – اجماع عمومیقوی

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8. کدام اعمال جراحی اطفال به صورت روتین نیاز به پروفیلاکسی VTE دارند؟

پاسخ/توصیه: در عدم حضور ریسک فاکتورهای مشخص VTE، کموپروفیلاکسی برای VTE در کودکان زیر 13 سال برای اعمال جراحی ارتوپدی نبایستی انجام شود.

قدرت توصیه: ضعیف

رای نمایندگان: موافق (100٪)، ممتنع (0.00٪)، مخالف (0.00٪) – اجماع عمومیقوی

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فصل هفتم

شانه و آرنج

مترجم:

دکتر نجفی

شانه و آرنج

1. در مورد خطر VTE، کدام جراحی‌ها می‌تواند عمده در نظر گرفته شود و کدام جراحی‌ها را می‌توان در جراحی شانه و آرنج غیر عمده در نظر گرفت؟

پاسخ/توصیه: آرتروسکوپی شانه، آرتروپلاستی شانه مرتبط با شکستگی، و تمام جراحی‌های آرنج را می‌توان با خطر ترومبوآمبولی وریدی غیر عمده (VTE) در نظر گرفت. روش‌های مربوط به شکستگی شانه را می‌توان خطر اصلی VTE در نظر گرفت.

قدرت توصیه: محدود.

رای نمایندگان: موافق (93.94٪)، مخالف (6.06٪)، ممتنع (0.00٪) - اجماع عمومیقوی

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2. آیا بی‌حرکتی اندام فوقانی بر پروتکل پروفیلاکسی VTE تاثیر می‌گذارد؟

پاسخ/توصیه: هیچ مطالعه‌ای به طور مستقیم به این سؤال پاسخ نداده است که آیا بی حرکتی اندام فوقانی بر پروتکل پیشگیری از ترومبوآمبولی وریدی (VTE) تأثیر می‌گذارد. شواهد کافی برای حمایت از هرگونه تغییر در پروتکل پیشگیری از VTE بر اساس نیاز به بی‌حرکتی اندام فوقانی وجود ندارد.

قدرت توصیه: محدود.

رای نمایندگان: موافق (100.00٪)، مخالف (0.00٪)، ممتنع (0.00٪) - اجماع عمومیقوی

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3. آیا روش طبقه‌بندی خطر برای VTE اندام فوقانی وجود دارد؟

پاسخ/توصیه: هیچ طبقه‌بندی خطر جهانی برای ترومبوآمبولی وریدی (VTE) در مورد اندام فوقانی وجود ندارد، مگر در حین جراحی ارتوپدی دست، مچ و آرنج. مناسب است که عوامل خطر شخصی و مبتنی بر جراحی برای همه بیماران در نظر گرفته شود. آن دسته از عمل‌های اندام فوقانی تحت بی‌حسی

موضعی یا منطقه‌ای بدون آرام‌بخشی شدید در معرض خطر بسیار کم برای VTE هستند و بنابراین ارزیابی دقیق ریسک نشان داده نمی‌شود.

قدرت توصیه: محدود.

رای نمایندگان: موافق (100.00٪)، مخالف (0.00٪)، ممتنع (0.00٪) - اجماع عمومیقوی

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4. آیا باید پروفیلاکسی معمول VTE برای بیمارانی که تحت بی‌حرکتی اندام فوقانی مانند گچ‌گیری قرار می‌گیرند، انجام شود؟

پاسخ/توصیه: در حالی که هیچ دستورالعمل رسمی برای توصیه پروفیلاکسی روتین ترومبوآمبولی وریدی (VTE) برای بیمارانی که تحت بی‌حرکتی اندام فوقانی قرار می‌گیرند، وجود ندارد، خطر VTE اندام فوقانی همچنان وجود دارد. با توجه به اینکه پروفیلاکسی VTE برای بیماران پرخطری که تحت روش‌های مختلف ارتوپدی اندام تحتانی یا نخاعی قرار می‌گیرند، توصیه می‌شود، پیشگیری از VTE در بیماران پرخطری که تحت بی‌حرکتی اندام فوقانی قرار می‌گیرند، ممکن است مفید باشد. با این حال، شواهد قطعی نیست و باید تحقیقات بیشتری انجام شود.

قدرت توصیه: محدود.

رای نمایندگان: موافق (90.91٪)، مخالف (9.09٪)، ممتنع (0.00٪) - اجماع عمومیقوی.

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5. آیا تجویز آسپرین به عنوان پیشگیری کننده VTE در بیماران تحت عمل جراحی اندام فوقانی نقشی دارد؟

پاسخ/توصیه: شواهد کافی برای حمایت یا توصیه بر ضد استفاده از آسپرین به عنوان پیشگیری از ترومبوآمبولی وریدی (VTE) در جراحی اندام فوقانی وجود ندارد. ممکن است برای بیماران پرخطری که تحت عمل جراحی ترمیمی پیچیده‌تری قرار می‌گیرند بسیار سودمند باشد.

قدرت توصیه: محدود است.

رای نمایندگان: موافق (93.94٪)، مخالف (6.06٪)، ممتنع (0.00٪) - اجماع عمومیقوی

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6. آیا باید پروفیلاکسی روتین VTE برای بیماران تحت استئوسنتز اندام فوقانی انجام شود؟

پاسخ/توصیه: پروفیلاکسی معمول ترومبوآمبولی وریدی (VTE) در بیمارانی که تحت استئوسنتز اندام فوقانی تحت بی‌حسی موضعی یا منطقه‌ای قرار می‌گیرند، نیازی نیست. پروفیلاکسی VTE باید در بیماران در معرض خطر بالای VTE و کسانی که تحت عمل جراحی تحت بیهوشی عمومی که بیش از 90 دقیقه طول می‌کشد در نظر گرفته شود.

قدرت توصیه: محدود.

رای نمایندگان: موافق (100.00٪)، مخالف (0.00٪)، ممتنع (0.00٪) - اجماع عمومیقوی

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7. آیا باید پروفیلاکسی معمول شیمیایی VTE برای بیماران تحت عمل آرتروپلاستی شانه انجام شود؟

پاسخ/توصیه: با توجه به افزایش حداقل خطر رویدادهای ترومبوآمبولیک بالینی مهم پس از آرتروپلاستی شانه، بعید است که مزایای پروفیلاکسی شیمیایی ترومبوز ورید عمقی (DVT) بیشتر از خطرات باشد. شواهد کافی برای حمایت یا توصیه به استفاده از آسپرین (ASA) به عنوان پیشگیری از ترومبوآمبولی وریدی (VTE) در جراحی اندام فوقانی وجود ندارد. خطرات خونریزی مرتبط با هپارین با وزن مولکولی کم (LMWH) و داروهای ضد انعقاد مستقیم خوراکی (DOAC) بیشتر از فواید در بیماران بدون عوامل خطر قابل توجهی برای VTE است.

قدرت توصیه: محدود.

رای نمایندگان: موافق (96.97٪)، مخالف (3.03٪)، ممتنع (0.00٪) - اجماع عمومیقوی

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8. آیا باید پروفیلاکسی روتین VTE برای بیماران تحت ترمیم روتاتور کاف انجام شود؟

پاسخ/توصیه: بروز ترومبوآمبولی وریدی (VTE) پس از ترمیم روتاتور کاف آرتروسکوپی (RCR) بسیار کم است. اگرچه ادبیات کنونی چندین عامل خطر برای VTE را پس از RCR آرتروسکوپی شناسایی کرده است، شواهد محدودی وجود دارد که از اثربخشی پروفیلاکسی معمول VTE بعد از عمل حمایت می‌کند. در غیاب هیچ گونه ادبیاتی برای راهنمایی یک توصیه، نظر اجماع عمومیما این است که بیمارانی که تحت RCR قرار می‌گیرند باید فشرده سازی مکانیکی حین عمل و موبیلیزاسیون زودهنگام داشته باشند. بیماران همچنین باید طبقه‌بندی شوند و اگر به دلیل سایر شرایط پزشکی پرخطر در نظر گرفته شوند، باید کموپروفیلاکسی VTE را در نظر گرفت.

قدرت توصیه: محدود.

رای نمایندگان: موافق (96.97٪)، مخالف (0.00٪)، ممتنع (3.03٪) - اجماع عمومیقوی

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9. آیا باید پروفیلاکسی روتین VTE برای بیمارانی که تحت روش های آرتروسکوپی تثبیت شانه قرار می‌گیرند، انجام شود؟

پاسخ/توصیه: در حال حاضر، هیچ داده‌ای وجود ندارد که نشان دهد ترومبوپروفیلاکسی روتین باید در بیمارانی که تحت تثبیت آرتروسکوپی شانه در بیماران در معرض خطر عادی قرار دارند، انجام شود. با توجه به خطر کم عوارض، باید از دستگاه‌های فشرده‌سازی متناوب پنوماتیک (IPC) استفاده شود. پروفیلاکسی دارویی ترومبوآمبولی وریدی (VTE) ممکن است در بیماران تحت عمل جراحی تثبیت با روش Latarjet/Bristow در نظر گرفته شود.

نقطه قوت توصیه: اجماع.

رای نمایندگان: موافق (87.88٪)، مخالف (9.09٪)، ممتنع (3.03٪) - اجماع عمومیقوی

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10. آیا باید پروفیلاکسی معمول VTE برای بیمارانی که تحت عمل آرتروپلاستی آرنج قرار می‌گیرند، انجام شود؟

پاسخ/توصیه: هیچ داده مناسبی برای راهنمایی یک توصیه قوی مبتنی بر شواهد در مورد نیاز به پیشگیری از ترومبوآمبولی وریدی (VTE) برای بیمارانی که تحت عمل آرتروپلاستی آرنج (EA) قرار می‌گیرند، وجود ندارد. حداقل، فشرده‌سازی متناوب پنوماتیک (IPC) و پیاده‌روی زودهنگام بعد از عمل، مداخلات کم خطری هستند که باید مورد استفاده قرار گیرند.

نقطه قوت توصیه: اجماع.

رای نمایندگان: موافق (90.91٪)، مخالف (6.06٪)، ممتنع (3.03٪) - اجماع عمومیقوی.

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پاسخ/توصیه: در غیاب هیچ گونه ادبیاتی برای راهنمایی یک توصیه، نظر اتفاق نظر ما این است که بیمارانی که تحت بازسازی رباط به دلیل بی ثباتی آرنج قرار می‌گیرند باید تحت فشار مکانیکی حین عمل و موبیلیزاسیون زودهنگام قرار گیرند. بیماران همچنین باید طبقه‌بندی شوند و اگر به دلیل سایر شرایط پزشکی پرخطر در نظر گرفته شوند، باید به کموپروفیلاکسی ترومبوآمبولی وریدی (VTE) اضافه شود.

نقطه قوت توصیه: اجماع.

رای نمایندگان: موافق (93.94٪)، مخالف (6.06٪)، ممتنع (0.00٪) - اجماع عمومیقوی

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12. علائم کلاسیک DVT اندام فوقانی در صورت وجود چیست؟

پاسخ/توصیه: بیشتر علائم و نشانه‌های ترومبوز ورید عمقی اندام فوقانی (DVT) نسبتاً مشخص هستند، مانند درد و ادم. با این حال، علائم غیرمعمول‌تری مانند کولترال‌های وریدی قابل مشاهده و تغییر رنگ پوست برای DVT نگران کننده‌تر هستند.

قدرت توصیه: محدود.

رای نمایندگان: موافق (100.00٪)، مخالف (0.00٪)، ممتنع (0.00٪) - اجماع عمومیقوی

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فصل هشتم

ستون فقرات

مترجم:

دکتر پارسا

ستون فقرات

1. آیا اسکرینینگ VTE قبل از عمل ویا پس از عمل برای بیمارانی که تحت عمل جراحی اسپاین قرار می‌گیرند به صورت روتین لازم است؟

پاسخ / توصیه: اسکرینینگ روتین VTE در جراحی های ستون فقرات جایگاهی ندارد. پایش با سونوگرافی داپلرممکن است برای بیماران با ریسک بالا در نظر گرفته شود. مثل بیماران با سن بالا، ترومای اسپاین، سابقه، بدخیمی، اسپوندیلیک میلوپاتی سرویکال و عدم توانایی راه رفتن

قدرت توصیه: محدود

رای نمایندگان: موافق (96.43%)، ممتنع (3.57%)، مخالف (0.0%) – اجماع عمومیقوی

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2. Nicol M, Sun Y, Craig N, Wardlaw D. Incidence of thromboembolic complications in lumbar spinal surgery in 1,111 patients. Eur Spine J. 2009 Oct; 18(10):1548-52.
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2. با در نظر گرفتن خطر VTE کدام جراحی‌ها در ستون فقرات با ریسک بالا و کدام با ریسک پایین در نظر گرفته می‌شوند.

پاسخ / توصیه:با در نظر گرفتن خطر VTE، جراحی‌های انکولوژی، تروما وعفونت در ستون فقرات با ریسک بالا در نظر گرفته می‌شوند. همچنین عمل‌هایی که نیاز به بستری در ICU دارند، عمل‌های چند مرحله‌ای و اپروچ دو طرفه نیز با ریسک بالا هستند.

قدرت توصیه: متوسط

رای نمایندگان: موافق (100%)، ممتنع (0%)، مخالف (0%) – اجماع عمومیقوی به اتفاق آرا

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3. آیا نگرانی برای هماتوم اپی دورال تاثیری در انتخاب کموپروفیلاکسی VTE در ستون جراحی فقرات دارد؟

پاسخ/توصیه: هماتوم اپی دورال پس از جراحی‌های اسپاین همچنان یک عارضه نگران کننده است که شیوعی بین 0-1.8 % دارد. اگرچه شواهد منتشر شده‌ای که به صورت دقیق بی‌خطر بودن کموپروفیلاکسی VTE را مشخص کند وجود ندارد ولی به نظر می‌رسد تجویز داروهای ضد انعقاد با دوز غیر درمانی پس از جراحی‌های اسپاین خطر هماتوم اپی دورال را بالا نمی‌برد. مطالعات آینده‌نگر بیشتری برای هزینه – فایده تجویز کمو پروفیلاکسی در جلوگیری از DVT یا ایجاد هماتوم اپی دورال لازم است

قدرت توصیه: محدود

رای نمایندگان: موافق (96.3%)، ممتنع (3.7%)، مخالف (0%) – اجماع عمومیقوی

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4. اگر قرار باشد پروفیلاکسی دارویی برای جراحی اسپاین شروع شود زمان مناسب آن چه زمانی است؟

پاسخ/توصیه: پروفیلاکسی دارویی می تواند 24-48 ساعت پس از فیوژن لومبار شروع شود وبرای بیمارانی که ریسک بالاتر خونریزی دارندنی توان 48 ساعت بعد شروع کرد. مزایای پروفیلاکسی دارویی بایستی در مقابل خطر خونریزی سنجیده شود

قدرت توصیه: محدود

رای نمایندگان: موافق (88.46%)، ممتنع (11.56%)، مخالف (0%) – اجماع عمومیقوی

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5. اگر قراربه شروع پروفیلاکسی دارویی برای جراحی اسپاین باشد آیا تعداد لولهای درگیر و یا آناتومیک و یا اپروچ جراحی (مثلا کم تهاجمی) انتخاب داروی پروفیلاکسی را تحت تاثیر قرار می‌دهد؟

پاسخ/توصیه: برخی شواهد وجود دارد که نشان می‌دهد پروفیلاکسی دارویی برای جراحی لومبار مولتی لول در نظر گرفته شود به خصوص در اپروچ قدامی

قدرت توصیه: محدود

رای نمایندگان: موافق (96.3%)، ممتنع (3.7%)، مخالف (0%) – اجماع عمومیقوی

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6. آیا آسپیرین پروفیلاکسی دارویی مناسبی برای جراحی اسپاین است؟

پاسخ/توصیه: اگرچه آسپیرین میزان در عمل‌های جراحی ارتوپدی را کاهش می‌دهد ولی مطالعات با کیفیت مناسبی که تاثیر آن در ستون فقرات را تایید کند وجود ندارد. ما پیشنهاد می‌کنیم که جراحان مزیت پروفیلاکسی را با امکان خونریزی را نسبت به هم بسنجند.

قدرت توصیه: اجماع

رای نمایندگان: موافق (96.43%)، ممتنع (3.57%)، مخالف (0%) – اجماع عمومیقوی

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7. پروتکل بهینه قبل عمل اسپاین برای بیماری که به علت دیگری غیر از اسپاین آسپیرین دریافت می‌کند چیست؟

پاسخ/توصیه: قبل از جراحی اسپاین آسپیرین با دوز پایینی (LD-ASA) (81-500 میلی‌گرم) که برای پیشگیری قلبی عروق اولیه و ثانویه استفاده می‌شود می‌توان یک تا سه روز قبل عمل قطع کرد. اگر بیمار آسپیرین با دوز بیش از یک گرم می‌گرفته است بایستی از یک هفته قبل آسپیرین قطع شود. اگرچه در بیمارانی که سابقه بیماری قلبی جدی دارند منطقی است که دوز پایین آسپیرین 81 می را در طول جراحی اسپاین ادامه دهند.

قدرت توصیه: متوسط

رای نمایندگان: موافق (89.29%)، ممتنع (0%)، مخالف (10.71%) — اجماع عمومیقوی

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8. پروتکل بهینه قبل از جراحی برای بیمارانی که به دلیلی غیر از اسپاین تحت درمان با وارفارین بوده‌اند چیست؟

پاسخ/توصیه: وارفارین بانستی حداقل 5 روز قبل از جراحی اسپاین قطع شود. هدف INR 1.2 یا کمتر است

قدرت توصیه: متوسط

رای نمایندگان: موافق (92.86%)، ممتنع (3.57%) مخالف (3.57%).

161. Ageno W, Gallus AS, Wittkowsky A, Crowther M, Hylek EM, Palareti G. Oral anticoagulant therapy: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest. 2012 Feb;141(2)(Suppl):e44S-88S.

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9. در بیمارانی که ضد انعقاد به علت غیر از اسپاین دریافت می‌کنند آیا نیاز به درمان بریجینگ پس از قطع ضد انعقاد می‌باشد؟

پاسخ/توصیه: درمان بریجینگ حوالی عمل نسبت به دارو نما در کنترل حوادث ترومبوآمبولیک حوالی عمل دربیمارانی که ضد انقاد را قطع می‌کنند موثرتر نبوده است. به علاوه درمان بریجینگ در بیماران ریسک خونریزی را بالاتر می‌برد. اگر با تصمیم پزشک معالج دراین شرایط درمان بریجینگ برای بیمار با ریسک بالایی در نظر گرفته شود هپارین و هپارین با وزن مولکولی پایین انتخابهای مناسبی هستند

قدرت توصیه: محدود

رای نمایندگان: موافق (89.29%)، ممتنع (7.14%)، مخالف (3.57%) - اجماع عمومیقوی

167. Rokito SE, Schwartz MC, Neuwirth MG. Deep vein thrombosis after major reconstructive spinal surgery. Spine (Phila Pa 1976). 1996 Apr 1;21(7):853-8, discussion :859.

168. Coumadin. Princeton, NJ: Bristol-Myers Squibb Company; 1954.

169. Narouze S, Benzon HT, Provenzano D, Buvanendran A, De Andres J, Deer T, Rauck R, Huntoon MA. Interventional Spine and Pain Procedures in Patients on Antiplatelet and Anticoagulant Medications (Second Edition): Guidelines From the American Society of Regional Anesthesia and Pain Medicine, the European Society of Regional Anaesthesia and Pain Therapy, the American Academy of Pain Medicine, the International Neuromodulation Society, the North American Neuromodulation Society, and the World Institute of Pain. Reg Anesth Pain Med. 2018 Apr;43(3): 225-62.

170. Young EY, Ahmadinia K, Bajwa N, Ahn NU. Does chronic warfarin cause increased blood loss and transfusion during lumbar spinal surgery? Spine J. 2013 Oct;13(10):1253-8.

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10. آیا بیماران ترومای اسپاین نیاز به پروفیلاکسی VTE روتین قبل و بعد از عمل نیاز دارند؟

پاسخ/توصیه: بماران ترومای اسپاین ریسک بالایی برای VTE دارند. توصیه برای پروفیلاکسی در این بیماران براساس فاکتورهایی مثل وجود آسیب اسپاینال کورد، سگمان اسپاین درگیر و سن صورت می‌گیرد.

قدرت توصیه: متوسط

رای نمایندگان: موافق (100%)، ممتنع (0.00%)، مخالف (0.00%)

175. BjØrnara BT, Gudmundsen TE, Dahl OE. Frequency and timing of clinical° venous thromboembolism after major joint surgery. J Bone Joint Surg Br. 2006 Mar; 88(3):386-91.

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189. Green D, Hartwig D, Chen D, Soltysik RC, Yarnold PR. Spinal Cord Injury Risk Assessment for Thromboembolism (SPIRATE Study). Am J Phys Med Rehabil. 2003 Dec;82(12):950-6.

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11. آیا وجود پارگی دورا در انتخاب نوع ضد انعقاد پس از عمل موثر است؟

توصیه/پاسخ: پس از عمل‌های اسپاین، در صورت پارگی تصادفی دورا خطر بروز VTE بالا می‌رود (1.5 برابر). بنابراین در صورت پاره شدن دورا حین عمل بایستی پروفیلاکسی VTE در نظر گرفته شود.

قدرت توصیه: محدود

رای نمایندگان: موافق (92.31%)، ممتنع (3.85%)، مخالف (3.85%)

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12. آیا پروفیلاکسی روتین VTE برای کودکانی که تحت درمان جراحی ماژوراسپاین قرار می‌گیرند نیاز است؟

پاسخ/توصیه: به کاربردن پروفیلاکسی دارویی VTE برای جراحی‌های ماژور اسپاین در کودکان با شواهد موجود حمایت نمی‌شود. پروفیلاکسی دارویی بایستی محدود به بیماران با ریسک فاکتورهای متعدد شود. در مورد استفاده از پروفیلاکسی مکانیکی اختلاف نظر وجود دارد اگرچه ریسک کمی دارند.

قدرت توصیه :محدود

رای نمایندگان: موافق (96.3%)، ممتنع (0.00%)، مخالف (3.7 %) - اجماع عمومیقوی

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فصل نهم

اسپورت

مترجم:

دکتر پارسا

اسپورت

1. از نظرخطر DVT کدام جراحی‌های ارتوپدی اسپورت ماژور و کدام مینور محسوب می‌شوند؟

پاسخ/توصیه: به طور کل خطر بروز در جراحی‌های اسپورت کم است و با دوره طولانی‌تر بی‌حرکتی و عدم وزن‌گذاری افزایش پیدا می‌کند. جراحی‌های اندام فوقانی اسپورت با خطر کم درنظر گرفته می‌شوند به جهت تاثیر کمی که در راه افتادن و تحرک پس از عمل بیمار دارند. اعمال جراحی اندام تحتانی که بیمار قادر است پس از عمل راه برود نیز مینور در نظر گرفته می‌شوند. اعمال جراحی اسپورت اندام تحتانی که بیمار پس از عمل محدودیت وزن‌گذاری و راه افتادن دارند ماژور محسوب می‌شوند.

قدرت توصیه: اجماع

رای نمایندگان: موافق (96.15٪)، ممتنع (3.85٪)، مخالف (0٪) – اجماع عمومیقوی

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2. آیا پروفیلاکسی VTE روتین برای بیمارانی که تحت آرتروسکوپی زانو قرار می‌گیرند و پس از عمل اجازه وزن‌گذاری کامل خواهند داشت لازم است؟

پاسخ/توصیه: شواهد برای توصیه ترومبوپروفیلاکسی برای تمام بیمارانی که از سایر جهات سالم هستند پس از آرتروسکوپی زانو ناکافی است.

قدرت توصیه: متوسط

رای نمایندگان: موافق (96.15٪)، ممتنع (3.85٪)، مخالف (0٪) – اجماع عمومیقوی

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3. بهترین پروفیلاکسی VTE در بیمارانی که تحت آرتروسکوپی زانو قرار می‌گیرند و قرار است مدت زیادی وزن‌گذاری نداشته باشند چیست؟

پاسخ/توصیه: مطالعه‌ای در منابع موجود وجود ندارد که رابطه بین عدم وزن‌گذاری بعد از آرتروسکوپی زانو و بروز ترومبوز وریدی را بیان کرده باشد. در نتیجه پروفیلاکسی ویژه‌ای برای این مورد سنجیده نشده روتین از پروفیلاکسی در این بیماران حمایت می‌کنیم مگر خطر بالای خونریزی وجود داشته باشد یا خونریزی پس از عمل رخ دهد.

قدرت توصیه: اجماع

رای نمایندگان: موافق (92٪)، ممتنع (4٪)، مخالف (4٪) – اجماع عمومیقوی

42. Camporese G, Bernardi E, Noventa F, Bosco M, Monteleone G, Santoro L, Bortoluzzi C, Freguja S, Nardin M, Marullo M, Zanon G, Mazzola C, Damiani G, Maniscalco P, Imberti D, Lodigiani C, Becattini C, Tonello C, Agnelli G; ERIKA Study Group. Efficacy of Rivaroxaban for thromboprophylaxis after Knee Arthroscopy (ERIKA). A phase II, multicentre, double-blind, placebo-controlled randomised study. Thromb Haemost. 2016 Aug 1;116(2):349-55.

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4. بهترین پروفیلاکسی برای بیمارانی که تحت عمل ریکانستراکشن ACL قرار می‌گیرند چیست؟

پاسخ / توصیه

قدرت توصیه: متوسط

رای نمایندگان: موافق (93.97٪)، ممتنع (2.59٪)، مخالف (3.45٪) – اجماع عمومیقوی

خطر بروزVTE در بیماران سالمی که تحت جراحی بازسازی رباط صلیبی قدامی قرار می‌گیرند کم است. شواهد متوسط تا ضعیفی وجود دارد که (LMWH) هپارین با وزن مولکولی کم، آسپیرین و ریواروکسابان می‌توانند آمبولی ریه و ترومبوز وریدی عمقی علامتدار را کاهش دهند. شواهد خیلی ضعیف‌تری وجود دارد که LMWH می‌توانند میزان ترومبوز وریدی بدون علامت را در مقایسه با عدم پروفیلاکسی کاهش دهند. از نظر میزان بروز عوارض جانبی بین آسپیرین و LMWH و رواروکسابان در این بیماران تفاوتی مشاهده نشده است، اگرچه داده‌ها در این زمینه کم هستند به جهت موارد قلیل عوارض جانبی گزارش شده در مطالعات موجود، طبقه‌بندی کردن ریسک فاکتورهایی مانند بیماری‌های زمینه‌ای، وضعیت وزن‌گذاری و استفاده از بی‌حرکتی ضروری است.

قدرت توصیه: متوسط

رای نمایندگان: موافق (100٪)، ممتنع (0٪)، مخالف (0٪) – اجماع عمومیقوی

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5. آیا بیمارانی که تحت آرتروسکوپی هیپ قرار می‌گیرند به صورت روتین نیاز به پروفیلاکسی VTE دارند؟

ریسک پس از آرتروسکوپی هیپ پایین است و استفاده روتین از پروفیلاکسی توصیه نمی‌شود. در بیماران با است. با در نظر گرفتن این مساله که عدم وزن‌گذاری ریسک فاکتور شناخته شده بروز می‌باشد ما از استفاده ریسک فاکتورهای خاص می‌توان پروفیلاکسی در نظر گرفت.

پاسخ/توصیه

قدرت توصیه: محدود

رای نمایندگان: موافق (92.31٪)، ممتنع (0٪)، مخالف (7.69٪) – اجماع عمومیقوی

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6. آیا بیمارانی که تحت فمورواستابولوپلاستی مینی اپن قرار می‌گیرند نیاز به پروفیلاکسی VTEدارند؟

پاسخ/توصیه: داده برای این سوال بسیار کم است. بر اساس شواهد موجود آسپیرین می‌تواند انتخاب خوبی برای بیماران با ریسک استاندارد باشد که تحت فمورو استابولوپلاستی مینی باز قرار می‌گیرند.

قدرت توصیه: ضعیف

رای نمایندگان: موافق (93.97٪)، ممتنع (2.59٪)، مخالف (3.45٪) – اجماع عمومیقوی

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7. ورزشکاران حرفه‌ای چگونه بایستی پروفیلاکسی شیمیایی VTE دریافت کنند یا تحت درمان DVT حاد قرار بگیرند؟

پاسخ/توصیه: برای مدیریت VTE در ورزشکاران حرفه‌ای اجماعی وجود ندارد. درحضور DVT حاد درمان شامل راه‌اندازی اولیه و شروع درمان داروئی مستمر به مدت حداقل سه ماه است و عدم بازگشت به ورزش برخوردی در تمام طول درمان. درمورد نوع داروی ضدانعقاد، انتخاب براساس شرایط بیمار و انتخاب پزشک و نوع ورزش می‌باشد. برخی نویسندگان آنتی کواگولان‌ها خوراکی با عملکرد مستقیم (DOAC) را ترجیح می‌دهند که ممکن

است زمان بازگشت به ورزش را در ورزشکارانی که قرار است طولانی ضد انعقاد دریافت کنند را کاهش می‌دهد.

ورزشکارانی که تحت درمان VTE هستند، معمولا بعد از سه هفته تمرینات کم خطر مثل شنا را شروع می‌کنند و به صورت پیش رونده در عرض 6 هفته به صورت کامل به ورزش غیربرخوردی باز می‌گردند.

قدرت توصیه: اجماع

رای نمایندگان: موافق (100٪)، ممتنع (0٪)، مخالف (0٪) – اجماع عمومیقوی

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فصل دهم

تروما

مترجم:

دکتر وثوقی

تروما

1. بهترین روش پیشگیری ترومبوامبولی در بیماران با اسیب متعدد ارتوپدی چیست؟

پاسخ/توصیه: اپرچه روش‌های متعدد پیشگیری ترومبوامبولی با اثر متفاوت در بیماران با اسیب متعدد ارتوپدی وجود دارد هپارین با وزن مولکولی پایین براساس شواهد موجود بهترین درمان می‌باشد.

قدرت توصیه: قابل قبول

رای اعضا: موافق (86.36٪)، مخالف (9.09٪)، ممتنع (4.55٪) - اتفاق نظر بالا

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2. بهترین روش پروفیلاکسی ترومبوامبولی در بیمار پلی تروما با شکستگی و آسیب احشایی همزمان چیست؟

پاسخ/ توصیه: در بیماران با شکستگی و آسیب احشایی داروهای ضدانعقاد در اولین فرصتی که ریسک خونریزی بیمار اجازه دهد باید شروع شود. روش پیشگیری ترومبوامبولی مکانیکال دوطرفه باید در بیمارانی که ریسک خونریزی بالا دارند باید در صورت فراهم بودن در نظر گرفته شود.

قدرت توصیه: قوی

رای اعضا: موافق (100٪)، مخالف (0٪)، ممتنع (0٪) - اتفاق نظر بالا

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3. بهترین راه برای تعیین میزان خونریزی حاد و پیش‌بینی میزان خونریزی حین عمل در بیمار ترومایی با آسیب ارتوپدی چیست؟

پاسخ/توصیه: فاکتورهای متعددی برای تعیین میزان خونریزی و پیش‌بینی نیاز به تزریق خون در بیماران ترومایی حاد ارزیابی شده. تخمین ریسک به صورت مناسب با درنظر گرفتن علایم حیاتی بیمار یافته‌های آزمایشگاهی آسیب ها و سابقه بالینی امکان‌پذیر است.

قدرت توصیه: پایین

رای اعضا: موافق (88.37٪)، مخالف (4.65٪)، ممتنع (6.98٪) - اتفاق نظر بالا

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4. روش اجرایی انتخابی در بیماران با آسیب تروماتیک نیازمند عمل جراحی در اندام تحتانی در صورتی که روی درمان ضد انعقاد یا ضد پلاکت باشند چیست؟

پاسخ/توصیه: نیازمند درنظر گرفتن ارزیابی سود خطر و مقایسه خطر خونریزی در مقابل خطر ترومبوامبولی است. براساس درجه فوریت میزان آسیب و وضعیت انعقادی بیمار بهترین روش ممکن است شامل به تعویق انداختن عمل جراحی و کنترل وضعیت انعقادی انتقال درمان ضد انعقاد (به داروهای تزریقی ضد انعقاد) یا معکوس کردن اثر ضد انعقادی باشد.

اکثر مطالعات توصیه می‌کنند که بیمارانی که تحت درمان با اسپرین هستند می‌توانند بدون درنگ تحت عمل جراحی قرار بگیرند. در بیمارانی که درحال دریافت داروهای ضد انعقادی هستند باید تست‌های انعقادی انجام شود. در صورتی که جراحی نمی‌تواند به تاخیر انداخته شود بیماران باید تحت معکوس کردن اثر ضد انعقاد قرار بگیرند. مطالعات موجود افزایشی در عوارض به دنبال انجام عمل جراحی ترومای اندام تحتانی بعد از معکوس سازی اثر ضد انعقاد نشان نمی‌دهند. به علاوه جراحی زودهنگام شکستگی هیپ علی رغم درمان ضد انعقاد در گروهی از بیماران ممکن است منطقی باشد.

قدرت توصیه: محدود

رای اعضا: موافق (90.91٪)، مخالف (6.82٪)، ممتنع (2.27٪) - اتفاق نظر بالا

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5. از نظر خطر ترومبوامبولی چه جراحی‌هایی اصلی و چه جراحی‌هایی غیر اصلی در ترومای ارتوپدی می‌توانند درنظر گرفته شوند؟

پاسخ/ توصیه: پروسیجرهای جراحی در اندام فوقانی و در دیستال به مچ پا در اندام تحتانی می‌توانند غیر اصلی درنظر گرفته شوند. خطر ترومبوامبولی در اندام تحتانی در اندام تحتانی از دیستال ساق یا مچ پا تا لگن افزایش می‌یابد و خطر بیشتری در جراحی‌های پروگزیمال‌تر وجود دارد. علاوه بر محل جراحی زمان انجام عمل و میزان تحرک بعد از عمل نیز می‌بایست درنظر گرفته شود.

قدرت توصیه: متوسط

رای اعضا: موافق (95.56٪)، مخالف (4.44٪)، ممتنع (0٪) - اتفاق نظر بالا

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6. آیا پروفیلاکسی روتین ضدانعقاد در بیماران با شکستگی منفرد اندام تحتانی که کاندید انجام جراحی نیستند باید انجام شود؟

پاسخ/توصیه: پروفیلاکسی روتین ضدانعقاد در بیماران با شکستگی منفرد اندام تحتانی که کاندید انجام جراحی نیستند نیازی نیست انجام شود. نیاز به پروفیلاکسی ضد انعقاد در بیماران با شکستگی منفرد اندام تحتانی محدود به بیماران پرخطر با بیماری‌های طبی متعدد زمینه‌ای با فعالیت شدیدا محدود و یا بیماران دارای سایر ریسک فاکتور های ترومبوامبولی است.

قدرت توصیه: متوسط

رای اعضا: موافق (95.65٪)، مخالف (4.35٪)، ممتنع (0٪) - اتفاق نظر بالا

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7. آیا پروفیلاکسی روتین ضد انعقاد در بیمارانی که بی‌حرکتی اندام تحتانی (نظیر گچ) دارند ولی جراحی نمی‌شوند اندیکاسیون دارد؟

پاسخ/توصیه: پروفیلاکسی روتین ضد انعقاد در بیماران با بی‌حرکتی اندام تحتانی اندیکاسیون ندارد.

قدرت توصیه: متوسط

رای اعضا:موافق (86.96٪)، مخالف (10.87٪)، ممتنع (2.17٪) - اتفاق نظر بالا

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8. آیا مدت زمان بی‌حرکتی در بیماران با آسیب اندام تحتانی روی انتخاب پروفیلاکسی ضد انعقاد اثر می‌گذارد؟

پاسخ/توصیه: مدت زمان بی‌حرکتی در بیماران با آسیب اندام تحتانی روی انتخاب پروفیلاکسی ضد انعقاد اثر نمی‌گذارد.

قدرت توصیه: متوسط

رای اعضا: موافق (93.18٪)، مخالف (4.55٪)، ممتنع (2.27٪) - اتفاق نظر بالا

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9. بهترین پروفیلاکسی ضد انعقاد در بیمارانی که تحت جراحی شکستگی هیپ قرار می‌گیرند چیست؟

پاسخ/توصیه: براساس ارزیابی خطر به صورت موردی پروفیلاکسی مکانیکال و دارویی ضد انعقاد در بیمارانی که تحت جراحی شکستگی هیپ قرار می‌گیرند درنظر گرفته می‌شود. در صورت بروز تاخیر در انجام جراحی مصرف داروهای ضد انعقاد می‌بایست حتما در نظر گرفته شود. مصرف داروی ضد انعقاد در طول دوره پرخطر از نظر ترمبوامبولی بعد عمل از 12 ساعت بعد بستن زخم تا 28 روز بعد از انجام عمل جراحی به صورت پیوسته می‌بایست انجام شود.

قدرت توصیه: متوسط

رای اعضا: موافق (95.56٪)، مخالف (2.22٪)، ممتنع (2.22٪) — اتفاق نظر بالا

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10. بهترین پروفیلاکسی ضد انعقاد در بیمارانی که تحت ارتروپلاستی (همی ارتروپلاستی یا توتال هیپ ارتروپلاستی) متعاقب شکستگی هیپ قرار می‌گیرند چیست؟

پاسخ/توصیه: بیماران شکستگی هیپ که تحت ارتروپلاستی هیپ قرار می‌گیرند در خطر افزایش یافته ترومبوامبولی هستند و یکی از انواع داروهای ضدانعقاد را می‌بایست دریافت کنند. مطالعات نشان می‌دهد که آسپرین داروی موثری برای پیشگیری از ترومبوامبولی در این گروه از بیماران می‌باشد.

قدرت توصیه: قوی

رای اعضا: موافق (84.78٪)، مخالف (8.70٪)، ممتنع (6.52٪) - اتفاق نظر بالا

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11. آیا پروفیلاکسی روتین ضد انعقاد در بیمارن با شکستگی شکننده (fragility fracture)هیپ یا اندام تحتانی لازم است؟

پاسخ/توصیه: درصورت بیشتر بودن خطر ترومبوامبولی نسبت به خطر خونریزی با توجه به بیماری‌های زمینه‌ای بیمار پروفیلاکسی ضد انعقاد در بیمارن با شکستگی شکننده (fragility fracture) هیپ یا اندام تحتانی توصیه می‌شود. استفاده از فشار پنوماتیک متناوب در بیمارانی که نمی‌توانند داروی ضد انعقاد دریافت کنند می‌بایست درنظر گرفته شود.

قدرت توصیه: پایین

رای اعضا: موافق (95.56٪)، مخالف (4.44٪)، ممتنع (0٪) - اتفاق نظر بالا

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12. آیا پروفیلاکسی ضد انعقاد در بیماران با شکستگی هیپ که تحت جراحی قرار نمی‌گیرند باید درنظر گرفته شود؟

پاسخ/توصیه: 1. برای بیماران با شکستگی هیپ غیر جابه جا که نیاز به انجام جراحی ندارند رژیم پیشگیری استاندارد با یکی از داروهای هپارین با وزن مولکولی پایین فونداپارینوکس هپارین unfractionated با وزن مولکولی پایین انتاگونیست ویتامین K با دوز تعدیل شده یا اسپرین می‌بایست در نظر گرفته شود.

2. در بیماران با شکستگی هیپ جا به جا که کنسرواتیو درمان می‌شوند پیشگیری ترومبوامبولی وریدی مشابه بیماران شکستگی هیپ که تحت عمل جراحی قرار می‌گیرند انجام می‌شود.

قدرت توصیه: محدود

رای اعضا: موافق (97.78٪)، مخالف (2.22٪)، ممتنع (0٪) - اتفاق نظر بالا

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13. آیا پروفیلاکسی ضد انعقاد در بیمارانی که تحت استیوتومی اطراف زانو قرار می‌گیرند نیاز است؟

پاسخ/توصیه: پروفیلاکسی دارویی یا مکانیکال ضد انعقاد در بیمارانی که تحت استیوتومی اطراف زانو قرار می‌گیرند توصیه می‌شود.

قدرت توصیه: متوسط

رای اعضا: موافق (93.48٪)، مخالف (2.17٪)، ممتنع (4.35٪) - اتفاق نظر بالا

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14. آیا پروفیلاکسی روتین ضد انعقاد در بیماران با شکستگی ایزوله کشکک زانو که تحت درمان جراحی/غیر جراحی قرار می‌گیرند نیاز است؟

پاسخ/توصیه: پروفیلاکسی روتین ضدانعقاد در بیماران با شکستگی ایزوله کشکک اندیکاسیون ندارد ولی در صورت وجود ریسک فاکتورهای ترومبوامبولی در بیمار باید درنظر گرفته شود.

قدرت توصیه: محدود

رای اعضا: موافق (93.02٪)، مخالف (6.98٪)، ممتنع (0٪) - اتفاق نظر بالا

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15. آیا WALANT برای شکستگی تیبیا/فیبولا با افزایش خطر ترومبوامبولی همراه است؟

پاسخ/توصیه: این که جراحی شکستگی تیبا/فیبولا به روش بدون تورنیکه با استفاده از بی‌حسی موضعی و حفظ هوشیاری (WALANT) منجر به افزایش ریسک ترومبوامبولی می‌شود یا خیر مشخص نیست. ما توصیه به استفاده از پروفیلاکسی ضد انعقاد طبق دستورالعمل موجود و فارغ از این که چه تکنیکی استفاده شود می‌کنیم.

قدرت توصیه: متوسط

رای اعضا: موافق (95.35٪)، مخالف (4.65٪)، ممتنع (0٪) - اتفاق نظر بالا

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16. آیا بیمارانی که تحت خروج وسیله از اندام تحتانی قرار می‌گیرند نیاز به پروفیلاکسی ضد انعقاد دارند؟

پاسخ/توصیه: بیمارانی که تحت خروج وسیله از اندام تحتانی قرار می‌گیرند در ریسک پایینی از نظر بروز ترومبوامبولی هستند و بنابراین استفاده روتین از پروفیلاکسی ضدانعقاد در آنها توصیه نمی‌شود.

قدرت توصیه: محدود

رای اعضا: موافق (95.56٪)، مخالف (2.22٪)، ممتنع (2.22٪) - اتفاق نظر بالا

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17. آیا بیمارانی که تحت خروج وسیله اندام فوقانی قرار می‌گیرند نیاز به پروفیلاکسی ضد انعقاد دارند؟

پاسخ/توصیه: بیمارانی که تحت خروج وسیله از اندام تحتانی قرار می‌گیرند در ریسک پایینی از نظر بروز ترومبوامبولی هستند و بنابراین استفاده روتین از پروفیلاکسی ضدانعقاد در آنها توصیه نمی‌شود. استفاده از اسپرین جهت پروفیلاکسی ضد انعقاد در بیماران با خطر بالای ترومبوامبولی ممکن است در نظر گرفته شود.

قدرت توصیه: براساس توافق نظر(consensus)

رای اعضا: موافق (97.78٪)، مخالف (2.22٪)، ممتنع (0٪) - اتفاق نظر بالا

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