Profilaxia do tromboembolismo venoso em cirurgia bariátrica

Venous thromboembolism prophylaxis in bariatric surgery

Winston Bonetti Yoshida[1]

Na nona edição do Consenso do American College of Chest Physicians (ACCP) de 2012, a cirurgia bariátrica foi definida como sendo de alto risco para o desenvolvimento de tromboembolismo venoso (TEV), juntamente com a cirurgia para o câncer ginecológico, pneumectomia, craniotomia, trauma encefálico, de medula espinal, ou outros traumas maiores[1]. Nessa categoria, a incidência de trombose venosa profunda (TVP) sem profilaxia pode variar de 40-80% distais nas pernas, 10-20% proximais, com 0,2-5,0% de incidência de embolia pulmonar (EP) fatal[2]. Dados de cirurgia bariátricas corroboram esses achados, com frequências de 0,2-2,4% de TVP e 1-2% de EP[3-6], sendo esta última responsável por 30-50% da mortalidade operatória[7-10]. Sendo assim, a profilaxia é mandatória para prevenção do TEV.

Em metanálise de Becattini et al.[11], os esquemas mais usados para pacientes bariátricos foram:

1. Heparina não fracionada (HNF) – na dose de 5.000 unidades internacionais (UI) subcutânea (SC) 3x ao dia por 15 dias.
2. Heparina de baixo peso molecular (HBPM) – enoxaparina na dose de 30 mg SC/2x ao dia ou 40 mg/2x ao dia por 15 dias.

O uso de doses ajustadas por Anti-Xa provocou aumento da frequência de sangramentos sem reduzir a de TEV[11]. De qualquer forma, a profilaxia farmacológica deve ser sempre individualizada, considerando o risco de sangramento de cada caso (úlcera péptica ativa, hipertensão arterial sistêmica não controlada, coagulopatia, plaquetopenia, insuficiência renal, etc.)[12].

A enoxaparina pode ser usada na dose de 60 mg/2x ao dia por 14 dias[12]. Em comparação com a dose de 40 mg/2x ao dia por 14 dias, um estudo observou que o risco de sangramento foi similar nos dois grupos. Nesse estudo, não foi avaliada a frequência de TEV no pós-operatório.

Em junção de dados feita por Stroh et al.[13] na Alemanha, com 31.668 cirurgias (13.772 by-passes Y de Roux, 11.840 gastrectomias em luva e 3.999 bandagens gástricas), a TVP ocorreu em 0,07% dos casos e EP em 0,10%, tendo sido preferencial o uso de HBPM. Esses dados foram corroborados por um levantamento realizado por outros autores[14]. Nesse levantamento, cerca de 94,4% das cirurgias foram abertas em Y de Roux e 5,6% por via laparoscópica.

Alguns autores preferem associar HNF com o uso de profilaxia mecânica, como deambulação precoce, compressão pneumática intermitente (CPI) e meia elástica de compressão graduada (MECG)[12,15].

Em estudo randomizado comparando o fondaparinux (5 mg/dia) com a enoxaparina (40 mg/2x ao dia)[16], os resultados de complicações (TEV) no pós-operatório foram similares nos dois grupos com índice de massa corporal (IMC) > 40 kg/m^2. O fondaparinux, no entanto, teve melhor ajuste aos níveis de anti-Xa. Sendo assim, aparentemente a enoxaparina da dose de 40 mg/2x ao dia ou o fondaparinux (5mg/dia) pareceram ser recomendáveis nos pacientes com IMC > 40 kg/m^2. Nos pacientes com IMC de 30-40 kg/m^2 e > 60 kg/m^2, ainda não há clara definição de dose[16].

Em revisão recente da literatura feita por Vandiver et al.[17], ficou clara a falta de evidências científicas quanto ao tipo e regime de doses específicos para pacientes bariátricos. As doses de 40 mg/2x dia de enoxaparina seriam efetivas e seguras para pacientes com IMC > 40 kg/m^2 [18-20]. De acordo com a revisão citada acima[17], o esquema de dosagem de 0,5 mg/kg de enoxaparina teria alguns inconvenientes, pois foi bem menos validado e seria mais propenso a erros de dosagem, visto que a enoxaparina vem acondicionada em seringas prontas com doses fixas, sendo difícil seu fracionamento. Nessa revisão, a dosagem indicada de HNF foi de 7.500 UI via SC (2 ou 3x ao dia), com base em estudo retrospectivo com grande número de pacientes[20]. Ainda nessa revisão, a dose recomendada

[1]Universidade Estadual Paulista – UNESP, Faculdade de Medicina de Botucatu, Departamento de Cirurgia e Ortopedia, Botucatu, SP, Brasil.
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de fondaparinux foi a de 2,5 mg SC ao dia; mas, no estudo de Steele et al.[16], a dose recomendada foi de 5 mg SC ao dia.

A profilaxia deve ser iniciada já no primeiro dia de internação, ou seja, tão logo haja risco para o desenvolvimento de TEV (ver fatores de risco). A maioria dos autores tem feito a profilaxia farmacológica somente depois da cirurgia[12,15,16]; porém, diante de imobilidade ou outros fatores de risco associados, esquemas de profilaxia mecânica foram indicados (CPI ou MECG).

A maior parte dos autores recomenda extensão da profilaxia por 2 semanas após a alta[17].

Além da obesidade e da própria cirurgia bariátrica, vários fatores de risco podem estar associados e devem ser considerados com relação ao esquema de dose e de profilaxia mecânica adicional[21]:

1. História prévia de tromboembolismo
2. Trombofilia conhecida
3. Imobilidade
4. Idade > 40 anos
5. Insuficiência cardíaca congestiva
6. Doença pulmonar obstrutiva crônica
7. Uso de estrógenos
8. Insuficiência venosa crônica
9. Fraturas
10. Infecção grave
11. Doenças inflamatórias
12. Varizes
13. Câncer
14. Quimioterapia

Em vigência de profilaxia farmacológica, a anestesia raquimedular deve ser feita somente 12 horas após a última dose de enoxaparina e reiniciada somente 12 horas após a cirurgia[21]. No caso de cateter epidural, este não deve ser removido ou implantado dentro de 12 horas da última dose de HBPM e 36 horas após uso de fondaparinux, e a dose de profilaxia deve ser postergada para 2 horas após o implante ou remoção do cateter.

Ainda faltam estudos de escalonamento de doses e comparativos entre os agentes profiláticos para melhor definição do esquema profilático ideal para pacientes bariátricos.

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Correspondência
Winston Bonetti Yoshida
Universidade Estadual Paulista – UNESP
Via Domingos Sartori, s/n - Distrito de Rubião Junior
CEP 18607-621 - Botucatu (SP), Brasil
Tel.: (14) 3880-1001
E-mail: winston@fmb.unesp.br

Informações sobre o autor
WBY - Professor titular, Departamento de Cirurgia e Ortopedia da Faculdade de Medicina de Botucatu, Universidade Estadual Paulista (UNESP), e editor-chefe do J Vasc Bras.

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Bariatric surgery was defined as high risk for development of venous thromboembolism (VTE) in the 2012 ninth edition of the American College of Chest Physicians' (ACCP) Consensus, along with surgery for gynecological cancer, pneumonectomy, craniotomy and traumas involving the brain or spinal cord, or other major traumas.[1] Without prophylaxis, the incidence of deep venous thrombosis (DVT) in this risk category ranges from 40 to 80% distally in the leg and from 10 to 20% proximally in the thigh, with a 0.2-5.0% incidence of fatal pulmonary embolism (PE).[2] Data for bariatric surgery patients corroborate these findings, with DVT frequencies of 0.2-2.4% and PE rates of 1-2%,[3-6] the latter being responsible for 30-50% of mortality related to the operation.[7-10] In view of this, prophylaxis for VTE is mandatory.

A meta-analysis conducted by Becattini et al.[11] found that the regimens most often used for bariatric surgery patients were as follows:

1. Unfractionated heparin (UFH) – at a dosage of 5,000 international units (IU) subcutaneously (SC) 3 times a day for 15 days.
2. Low molecular weight heparin (LMWH) – enoxaparin at a dosage of 30 mg SC twice a day or 40 mg twice a day for 15 days.

Adjusting doses for Anti-Xa provoked an increase in the frequency of bleeding without reducing VTE.[11] Irrespectively, pharmacological prophylaxis must always be managed on a case-by-case basis, considering the risk of bleeding in each case (active peptic ulcer, uncontrolled systemic arterial hypertension, coagulopathy, thrombocytopenia, renal failure, etc.).[12]

Enoxaparin can be administered at a dosage of 60 mg twice a day for 14 days.[12] A study that compared this with a dosage of 40 mg twice a day for 14 days found that the risk of bleeding was similar in both groups. This study did not assess VTE frequency during the postoperative period.

Stroh et al.[13] analyzed registry data compiled in Germany on 31,668 surgeries (13,772 Roux-en-Y-gastric bypasses, 11,840 sleeve gastrectomies and 3,999 gastric bandings) reporting DVT in 0.07% of cases and PE in 0.10% and concluding that LMWH was preferable to unfractionated heparins. These data were recently corroborated by an analysis conducted by different authors.[14] In these data, around 94.4% of procedures were Roux-en-Y open surgeries and 5.6% were laparoscopies.

Some authors prefer to combine HNF with mechanical prophylaxis, such as early mobilization, intermittent pneumatic compression (IPC), and graduated elastic compression stockings (GECS).[12,15]

In a randomized study comparing fondaparinux (5 mg/day) with enoxaparin (40 mg twice a day),[16] the results for complications (VTE) during the postoperative period were similar in two groups with body mass index (BMI) > 40 kg/m^2. However, fondaparinux was associated with better control of anti-Xa levels. Apparently, therefore, either enoxaparin at a dosage of 40 mg twice a day or fondaparinux (5mg/day) can be recommended for patients with BMI > 40 kg/m^2. There is not yet a clearly-defined dosage for patients with BMI in the range 30-40 kg/m^2 or > 60 kg/m^2.[16]

A recent literature review conducted by Vandiver et al.,[17] revealed a clear lack of scientific evidence to support specific types of regimen and dosages in bariatric patients. An enoxaparin dosage of 40 mg twice a day appears to be effective and safe for patients with BMI > 40 kg/m^2.[18-20] According to the same review mentioned above,[17] the 0.5 mg/kg enoxaparin regimen is associated with a greater degree of inconvenience, since it has been validated much less and is prone to dosage errors, and because the presentation of enoxaparin is in ready-to-use syringes in fixed doses, making it difficult to divide into smaller doses. The UFH dose recommended in the review was 7,500 IU SC (2 or 3 times a day), based on a retrospective

[1]Universidade Estadual Paulista – UNESP, Faculdade de Medicina de Botucatu, Departamento de Cirurgia e Ortopedia, Botucatu, SP, Brazil.
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study with a large number of patients.[20] Still with relation to the same review, the recommended dose of fondaparinux was 2.5 mg SC per day; but a study published by Steele et al.[16] recommended a dose of 5 mg SC per day.

Prophylaxis should be started on the first day of admission, i.e. as soon as there is a risk of development of VTE (see the risk factors). The majority of authors describe giving pharmacological prophylaxis only after surgery;[12,15,16] but when immobility or other risk factors were also present, mechanical prophylaxis methods were prescribed (IPC or GECS).

The majority of authors recommend continuing prophylaxis for 2 weeks after discharge.[17]

In addition to obesity and the bariatric surgery itself, several other risk factors can be linked with VTE and should be taken into consideration in relation to decisions on dosage regimen and additional mechanical prophylaxis:[21]

1. Prior history of thromboembolism
2. Known thrombophilia
3. Immobility
4. Age > 40 years
5. Congestive heart failure
6. Chronic obstructive pulmonary disease
7. Use of estrogens
8. Chronic venous insufficiency
9. Fractures
10. Severe infection
11. Inflammatory diseases
12. Varicose veins
13. Cancer
14. Chemotherapy

For patients already on pharmacological prophylaxis, spinal anesthesia should only be given 12 hours after the last dose of enoxaparin, which should only be restarted 12 hours after surgery.[21] When an epidural catheter is used, it should not be placed or removed within 12 hours of the last dose of LMWH or 36 hours after the last time that fondaparinux was administered, and prophylactic doses should be delayed until 2 hours after placement or removal of the catheter.

Dose escalation studies and studies comparing different prophylactic agents are still needed to better define the ideal prophylactic regimen in bariatric patients.

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Correspondence
Winston Bonetti Yoshida
Universidade Estadual Paulista – UNESP
Via Domingos Sartori, s/n - Distrito de Rubião Junior
CEP 18607-621 - Botucatu (SP), Brazil
Tel.: +55 (14) 3880-1001
E-mail: winston@fmb.unesp.br

Author information
WBY - Full professor, Departamento de Cirurgia e Ortopedia, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista (UNESP); and Editor-in-Chief, J Vasc Bras.