HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use FRAGMIN® safely and effectively. See full prescribing information for FRAGMIN.

FRAGMIN (dalteparin sodium injection) for Subcutaneous Use Only

Initial U.S. Approval: 1994

WARNING: SPINAL/EPIDURAL HEMATOMA
Epidural or spinal hematomas may occur in patients who are anticoagulated with low molecular weight heparins (LMWH) or heparinoids and are receiving neuraxial anesthesia or undergoing spinal puncture. These hematomas may result in long-term or permanent paralysis. Consider these risks when scheduling patients for spinal procedures. Factors that can increase the risk of developing epidural or spinal hematomas in these patients include:

- Use of indwelling epidural catheters
- Concomitant use of other drugs that affect hemostasis, such as non-steroidal anti-inflammatory drugs (NSAIDs), platelet inhibitors, other anticoagulants
- A history of traumatic or repeated epidural or spinal punctures
- A history of spinal deformity or spinal surgery

Monitor patients frequently for signs and symptoms of neurological impairment. If neurological compromise is noted, urgent treatment is necessary. Consider the benefits and risks before neuraxial intervention in patients anticoagulated or to be anticoagulated for thromboprophylaxis [see Warnings and Precautions (5.1) and Drug Interactions (7)].

RECENT MAJOR CHANGES

Boxed Warning (12/2009)
Indications and Usage (1.3) (12/2009)

INDICATIONS AND USAGE

FRAGMIN is a low molecular weight heparin (LMWH) indicated for:

- Prophylaxis of ischemic complications of unstable angina and non-Q-wave myocardial infarction (1.1)
- Prophylaxis of deep vein thrombosis (DVT) in abdominal surgery, hip replacement surgery or medical patients with severely restricted mobility during acute illness (1.2)
- Extended treatment of symptomatic venous thromboembolism (VTE) to reduce the recurrence in patients with cancer. In these patients, the FRAGMIN therapy begins with the initial VTE treatment and continues for six months (1.3)

Limitations of Use

FRAGMIN is not indicated for the acute treatment of VTE

DOSAGE AND ADMINISTRATION

<table>
<thead>
<tr>
<th>Indication</th>
<th>Dosing Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstable angina and non-Q-wave MI</td>
<td>120 IU/kg subcutaneous every 12 hours (with aspirin) (2.1)</td>
</tr>
<tr>
<td>DVT prophylaxis in abdominal surgery</td>
<td>2500 IU subcutaneous once daily or 5000 IU subcutaneous once daily or 2500 IU subcutaneous followed by 2500 IU subcutaneous 12 hours later and then 5000 IU subcutaneous once daily (2.1)</td>
</tr>
<tr>
<td>DVT prophylaxis in hip replacement surgery</td>
<td>Postoperative start – 2500 IU subcutaneous 4 to 8 hours after surgery, then 5000 IU subcutaneous once daily or Preoperative start – day of surgery 2500 IU subcutaneous 2 hours before surgery followed by 2500 IU subcutaneous 4 to 8 hours after surgery, then 5000 IU subcutaneous once daily (2.1)</td>
</tr>
</tbody>
</table>

DOSE FORMS AND STRENGTHS

- Single-dose prefilled syringe: 2,500 IU/0.2 mL, 5,000 IU/0.2 mL, 7,500 IU/0.3 mL, 10,000 IU/0.4 mL, 12,500 IU/0.5 mL, 15,000 IU/0.6 mL, 18,000 IU/0.72 mL (3)
- Single-dose graduated syringe: 10,000 IU/1 mL (3)
- Multiple dose vial: 95,000 IU/9.5 mL, 95,000/3.8 mL (3)

CONTRAINDICATIONS

- Active major bleeding (4)
- History of heparin induced thrombocytopenia or heparin induced thrombocytopenia with thrombosis (4)
- Hypersensitivity to dalteparin sodium (4, 6.1)
- In patients undergoing epidural/neuraxial anesthesia, do not administer FRAGMIN [see Boxed Warning and (4)]:
  - As a treatment for unstable angina and non-Q-wave MI
  - For prolonged VTE prophylaxis
  - Hypersensitivity to heparin or pork products (4)

WARNINGS AND PRECAUTIONS

- Use caution in conditions with increased risk of hemorrhage (5.1)
- Monitor thrombocytopenia of any degree closely (5.2)
- Multiple-dose formulations contain benzyl alcohol (5.3)
- Periodic blood counts recommended (5.4)

ADVERSE REACTIONS

Most common adverse reaction is hematoma at the injection site (6)

To report SUSPECTED ADVERSE REACTIONS, contact Eisai at (1-888-274-2378) or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

DRUG INTERACTIONS

- Use FRAGMIN with care in patients receiving oral anticoagulants, platelet inhibitors, and thrombolytic agents (7)

USE IN SPECIFIC POPULATIONS

- Safety and effectiveness in pediatric patients have not been established (8.4)

See 17 for PATIENT COUNSELING INFORMATION

Revised: [10/2010]
1 INDICATIONS AND USAGE
1.1 Prophylaxis of Ischemic Complications in Unstable Angina and Non-Q-Wave Myocardial Infarction
FRAGMIN® Injection is indicated for the prophylaxis of ischemic complications in unstable angina and non-Q-wave myocardial infarction, when concurrently administered with aspirin therapy (see Clinical Studies [14.1]).

1.2 Prophylaxis of Deep Vein Thrombosis
FRAGMIN is also indicated for the prophylaxis of deep vein thrombosis (DVT), which may lead to pulmonary embolism (PE):
- In patients undergoing hip replacement surgery (see Clinical Studies [14.2]):
- In patients undergoing abdominal surgery who are at risk for thromboembolic complications (see Clinical Studies [14.3]):
- In medical patients who are at risk for thromboembolic complications due to severely restricted mobility during acute illness (see Clinical Studies [14.4]).

1.3 Extended Treatment of Symptomatic Venous Thromboembolism in Patients with Cancer
FRAGMIN is also indicated for the extended treatment of symptomatic venous thromboembolism (VTE) (proximal DVT and/or PE), to reduce the recurrence of VTE in patients with cancer. In these patients, the FRAGMIN therapy begins with the initial VTE treatment and continues for six months (see Clinical Studies [14.5]).

2 DOSAGE AND ADMINISTRATION
2.1 Adult Dosage
2.2 Dose reductions for thrombocytopenia in patients with cancer and acute symptomatic VTE
2.3 Dose reductions for renal insufficiency in extended treatment of acute symptomatic venous thromboembolism in patients with cancer

3 DOSAGE FORMS AND STRENGTHS

4 CONTRAINDICATIONS

5 WARNINGS AND PRECAUTIONS
5.1 Increased Risk of Hemorrhage
5.2 Thrombocytopenia
5.3 Benzyl Alcohol
5.4 Laboratory Tests

6 ADVERSE REACTIONS
6.1 Clinical Trials Experience
6.2 Post-Marketing Experience

7 DRUG INTERACTIONS

8 USE IN SPECIFIC POPULATIONS
8.1 Pregnancy
8.3 Nursing Mothers
8.4 Pediatric Use
8.5 Geriatric Use

10 OVERDOSAGE

12 CLINICAL PHARMACOLOGY
12.1 Mechanism of Action
12.2 Pharmacodynamics
12.3 Pharmacokinetics

13 NONCLINICAL TOXICOLOGY
13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

14 CLINICAL STUDIES
14.1 Prophylaxis of Ischemic Complications in Unstable Angina and Non-Q-Wave Myocardial Infarction
14.2 Prophylaxis of Deep Vein Thrombosis in Patients Following Hip Replacement Surgery
14.3 Prophylaxis of Deep Vein Thrombosis Following Abdominal Surgery in Patients at Risk for Thromboembolic Complications
14.4 Prophylaxis of Deep Vein Thrombosis in Medical Patients at Risk for Thromboembolic Complications Due to Severely Restricted Mobility During Acute Illness
14.5 Patients with Cancer and Acute Symptomatic Venous Thromboembolism

16 HOW SUPPLIED/STORAGE AND HANDLING

17 PATIENT COUNSELING INFORMATION

Limitations of Use
FRAGMIN is not indicated for the acute treatment of VTE.

2 DOSAGE AND ADMINISTRATION
FRAGMIN is administered by subcutaneous injection. It must not be administered by intramuscular injection.

FRAGMIN Injection should not be mixed with other injections or infusions unless specific compatibility data are available that support such mixing.

Routine coagulation tests such as Prothrombin Time (PT) and Activated Partial Thromboplastin Time (APTT) are relatively insensitive measures of FRAGMIN activity and, therefore, unsuitable for monitoring the anticoagulant effect of FRAGMIN (see Warnings and Precautions [5]).

2.1 Adult Dosage
Prophylaxis of Ischemic Complications in Unstable Angina and Non-Q-Wave Myocardial Infarction: In patients with unstable angina or non-Q-wave myocardial infarction, the recommended dose of FRAGMIN Injection is 120 IU/kg of body weight, but not more than 10,000 IU, subcutaneously every 12 hours with concurrent oral aspirin (75 to 165 mg once daily) therapy. Treatment should be continued until the patient is clinically stabilized. The usual duration of administration is 5 to 8 days. Concurrent aspirin therapy is recommended except when contraindicated.

Table 1 lists the volume of FRAGMIN, based on the 9.5 mL multiple-dose vial (10,000 IU/mL), to be administered for a range of patient weights.

Table 1
Volume of FRAGMIN to be Administered by Patient Weight, Based on 9.5 mL Vial (10,000 IU/mL)

<table>
<thead>
<tr>
<th>Patient weight (lb)</th>
<th>&lt;110</th>
<th>110 to 131</th>
<th>132 to 153</th>
<th>154 to 175</th>
<th>176 to 197</th>
<th>≥198</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient weight (kg)</td>
<td>&lt;50</td>
<td>50 to 59</td>
<td>60 to 69</td>
<td>70 to 79</td>
<td>80 to 89</td>
<td>≥90</td>
</tr>
<tr>
<td>Volume of FRAGMIN (mL)</td>
<td>0.55</td>
<td>0.65</td>
<td>0.75</td>
<td>0.90</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Prophylaxis of Venous Thromboembolism Following Hip Replacement Surgery:
Table 2 presents the dosing options for patients undergoing hip replacement surgery. The usual duration of administration is 5 to 10 days after surgery; up to 14 days of treatment with FRAGMIN have been well tolerated in clinical trials.
As a treatment for unstable angina and non–Q-wave MI

For prolonged VTE prophylaxis

Allow approximately 24 hours between doses.

Allow a minimum of 6 hours between this dose and the dose to be given on Postoperative Day 1. Adjust the timing of the dose on Postoperative Day 1 accordingly.

Allow approximately 24 hours between doses.

Abdominal Surgery: In patients undergoing abdominal surgery with a risk of thromboembolic complications, the recommended dose of FRAGM IN is 2500 IU administered by subcutaneous injection once daily, starting 1 to 2 hours prior to surgery and repeated once daily postoperatively. The usual duration of administration is 5 to 10 days.

In patients undergoing abdominal surgery associated with a high risk of thromboembolic complications, such as malignant disorder, the recommended dose of FRAGM IN is 5000 IU subcutaneously the evening before surgery, then once daily postoperatively. The usual duration of administration is 5 to 10 days. Alternatively, in patients with malignancy, 2500 IU of FRAGM IN can be administered subcutaneously 1 to 2 hours before surgery followed by 2500 IU subcutaneously 12 hours later, and then 5000 IU once daily postoperatively. The usual duration of administration is 5 to 10 days.

Medical Patients During Acute Illness: In medical patients with severely restricted mobility during acute illness, the recommended dose of FRAGM IN is 5000 IU administered by subcutaneous injection once daily. In clinical trials, the usual duration of administration was 12 to 14 days.

Extended Treatment of Symptomatic Venous Thromboembolism in Patients with Cancer: In patients with cancer and symptomatic venous thromboembolism, the recommended dosage of FRAGM IN is as follows: for the first 30 days of treatment administer FRAGM IN 200 IU/kg total body weight subcutaneously once daily. The total daily dose should not exceed 18,000 IU. Table 3 lists the dose of FRAGM IN to be administered once daily during the first month for a range of patient weights.

<table>
<thead>
<tr>
<th>Month 1</th>
<th>Dose of FRAGM IN to be Administered Subcutaneously by Patient Weight during the First Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Weight (lbs)</td>
<td>Body Weight (kg)</td>
</tr>
<tr>
<td>≤124</td>
<td>≤56</td>
</tr>
<tr>
<td>125 to 150</td>
<td>57 to 68</td>
</tr>
<tr>
<td>151 to 181</td>
<td>69 to 82</td>
</tr>
<tr>
<td>182 to 216</td>
<td>83 to 98</td>
</tr>
<tr>
<td>≥217</td>
<td>≥99</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Months 2 to 6</th>
<th>Dose of FRAGM IN at a dose of approximately 150 IU/kg, subcutaneously once daily during Months 2 through 6. The total daily dose should not exceed 18,000 IU. Table 4 lists the dose of FRAGM IN to be administered once daily for a range of patient weights during months 2-6.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Weight (lbs)</td>
<td>Body Weight (kg)</td>
</tr>
<tr>
<td>≤124</td>
<td>≤56</td>
</tr>
<tr>
<td>125 to 150</td>
<td>57 to 68</td>
</tr>
<tr>
<td>151 to 181</td>
<td>69 to 82</td>
</tr>
<tr>
<td>182 to 216</td>
<td>83 to 98</td>
</tr>
<tr>
<td>≥217</td>
<td>≥99</td>
</tr>
</tbody>
</table>

Safety and efficacy beyond six months have not been evaluated in patients with cancer and acute symptomatic VTE [see Warnings and Precautions (5) and Adverse Reactions (6.1)].

2.2 Dose reductions for thrombocytopenia in patients with cancer and acute symptomatic VTE

In patients receiving FRAGM IN who experience platelet counts between 50,000 and 100,000/mm³, reduce the daily dose of FRAGM IN by 2,500 IU until the platelet count recovers to ≥100,000/mm³. In patients receiving FRAGM IN who experience platelet counts <50,000/mm³, discontinue FRAGM IN until the platelet count recovers above 50,000/mm³.

2.3 Dose reductions for renal insufficiency in extended treatment of acute symptomatic venous thromboembolism in patients with cancer

In patients with severely impaired renal function (CrCl <30 mL/min), monitor anti-Xa levels to determine the appropriate FRAGM IN dose. Target anti-Xa range is 0.5–1.5 IU/mL. When monitoring anti-Xa in these patients, perform sampling 4–6 hrs after FRAGM IN dosing and only after the patient has received 3-4 doses.

2.4 Administration

Subcutaneous injection technique: Patients should be sitting or lying down and FRAGM IN administered by deep subcutaneous injection. FRAGM IN may be injected in a U-shape area around the navel, the upper outer side of the thigh or the upper outer quadrant of the buttock. The injection site should be varied daily. When the area around the navel or the thigh is used, using the thumb and forefinger, you must lift up a fold of skin while giving the injection. The entire length of the needle should be inserted at a 45 to 90 degree angle.

Inspect FRAGM IN prefilled syringes and vials visually for particulate matter and discoloration prior to administration

After first penetration of the rubber stopper, store the multiple-dose vials at room temperature for up to 2 weeks. Discard any unused solution after 2 weeks.

Instructions for using the prefilled single-dose syringes preassembled with needle guard devices

- Hold the needle guard assembly by the open sides of the device. Remove the needle shield. Insert the needle into the injection area as instructed above. Depress the plunger of the syringe while holding the finger flange until the entire dose has been given. The needle guard will not be activated unless the entire dose has been given. Remove needle from the patient. Let go of the plunger and allow syringe to move up inside the device until the entire needle is guarded. Discard the syringe assembly in approved containers.

- Graded syringes: Hold the syringe assembly by the open sides of the device. Remove the needle shield. With the needle pointing up, prepare the syringe by expelling the air bubble and then continuing to push the plunger to the desired dose or volume, discarding the extra solution in an appropriate manner. Insert the needle into the injection area as instructed above. Depress the plunger of the syringe while holding the finger flange until the entire dose remaining in the syringe has been given. The needle guard will not be activated unless the entire dose has been given. Remove needle from the patient. Let go of the plunger and allow syringe to move up inside the device until the entire needle is guarded. Discard the syringe assembly in approved containers.

3 DOSAGE FORMS AND STRENGTHS

| 2,500 IU / 0.2 mL single-dose prefilled syringe | 5,000 IU / 0.2 mL single-dose prefilled syringe | 7,500 IU / 0.3 mL single-dose prefilled syringe | 10,000 IU / 0.4 mL single-dose prefilled syringe | 15,000 IU / 0.6 mL single-dose prefilled syringe | 20,000 IU / 0.7 mL single-dose prefilled syringe | 95,000 IU / 3.8 mL multiple-dose vial | 95,000 IU / 9.5 mL multiple-dose vial |

4 CONTRAINDICATIONS

- Active major bleeding
- History of heparin induced thrombocytopenia or heparin induced thrombocyto-
  penia with thrombosis
- Hypersensitivity to dalteparin sodium (e.g., pruritus, rash, anaphylactic reactions) [see Adverse Reactions (6.1)]
- In patients undergoing Epidural/Neuraxial anesthesia, do not administer FRAGM IN [See Boxed Warning]:
  - As a treatment for unstable angina and non–Q-wave MI
  - For prolonged VTE prophyaxis
  - Hypersensitivity to heparin or pork products

5 WARNINGS AND PRECAUTIONS

5.1 Increased Risk of Hemorrhage

Sporadic or epidural hematomas can occur with the associated use of low molecular weight heparins or heparinoids and neuraxial (spinal/epidural) anesthesia or spinal puncture. The risk of these events is higher with the use of post-operative indwelling
epidural catheters, with the concomitant use of additional drugs affecting hemostasis such as NSAIDs, with traumatic or repeated epidural or spinal puncture, or in patients with a history of spinal surgery or spinal deformity. [see Boxed Warning, Adverse Reactions (6.2) and Drug Interactions (7)].

Use FRAGMIN with extreme caution in patients who have an increased risk of hemorrhage, such as those with severe uncontrolled hypertension, bacterial endocarditis, congenital or acquired bleeding disorders, active ulceration and angioplasty/gastrointestinal disease, hemorrhagic stroke, or shortly after brain, spinal or ophthalmological surgery. FRAGMIN may enhance the risk of bleeding in patients with thrombocytopenia or platelet defects; severe liver or kidney insufficiency, hypertensive or diabetic retinopathy, and recent gastrointestinal bleeding. Bleeding can occur at any site during therapy with FRAGMIN.

5.2 Thrombocytopenia

Heparin-induced thrombocytopenia can occur with the administration of FRAGMIN. The incidence of this complication is unknown at present. In clinical practice, cases of thrombocytopenia with thrombosis, amputation and death have been observed [see Contraindications (4)]. Closely monitor thrombocytopenia of any degree.

In FRAGMIN clinical trials supporting non-cancer indications, platelet counts of <50,000/mm³ occurred in <1% of patients.

In the clinical trial of patients with cancer and acute symptomatic venous thromboembolism treated for up to 6 months in the FRAGMIN treatment arm, platelet counts of <100,000/mm³ occurred in 13.6% of patients, including 6.5% who also had platelet counts less than 50,000/mm³. In the same clinical trial, thrombocytopenia was reported as an adverse event in 10.9% of patients in the FRAGMIN arm and 8.1% of patients in the OAC arm. FRAGMIN dose was decreased or interrupted in patients whose platelet counts fell below 100,000/mm³.

5.3 Benzyl Alcohol

Each multiple-dose vial of FRAGMIN contains benzyl alcohol as a preservative. Benzyl alcohol has been reported to be associated with a fatal “Gassing Syndrome” in premature infants. Because benzyl alcohol may cross the placenta, use caution when administering FRAGMIN preserved with benzyl alcohol to pregnant women.

If anticoagulation with FRAGMIN is needed during pregnancy, use preservative-free formulations, where possible [see Use in Specific Populations (8.1)].

5.4 Laboratory Tests

Periodic routine complete blood counts, including platelet count, blood chemistry, and stool occult blood tests are recommended during the course of treatment with FRAGMIN. When administered at recommended prophylaxis doses, routine coagulation tests such as Prothrombin Time (PT) and Activated Partial Thromboplastin Time (APTT) are relatively insensitive measures of FRAGMIN activity and, therefore, unsuitable for monitoring the anticoagulant effect of FRAGMIN. Anti-Factor Xa may be used to monitor the anticoagulant effect of FRAGMIN, such as in patients with severe renal impairment or if abnormal coagulation parameters or bleeding occurs during FRAGMIN therapy.

6 ADVERSE REACTIONS

6.1 Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not accurately reflect the rates observed in practice.

Hemorrhage

The incidence of hemorrhagic complications during treatment with FRAGMIN has been low. The most commonly reported side effect is hematoma at the injection site. The risk for bleeding varies with the indication and may increase with higher doses.

Unstable Angina and Non-Q-Wave Myocardial Infarction

Table 5 summarizes major bleeding reactions that occurred with FRAGMIN, heparin, and placebo in clinical trials of unstable angina and non-Q-wave myocardial infarction.

<table>
<thead>
<tr>
<th>Indication</th>
<th>Dosing Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstable Angina and Non-Q-Wave MI</td>
<td></td>
</tr>
<tr>
<td>FRAGMIN 120 IU/kg/12 hr subcutaneous¹ n (%)</td>
<td></td>
</tr>
<tr>
<td>Heparin² intravenous and subcutaneous² n (%)</td>
<td></td>
</tr>
<tr>
<td>Placebo every 12 hr subcutaneous n (%)</td>
<td></td>
</tr>
</tbody>
</table>

Major Bleeding Reactions¹,²,³,⁴

15/1497 (1.0) 7/371 (1.0) 4/780 (0.5)

¹ Treatment was administered for 5 to 8 days.
² Heparin intravenous infusion for at least 48 hours, APTT 1.5 to 2 times control, then 12,500 U subcutaneously every 12 hours for 5 to 8 days.
³ Aspirin (75 to 165 mg per day) and beta blocker therapies were administered concurrently.
⁴ Bleeding reactions were considered major if: 1) accompanied by a decrease in hemoglobin of ≥2 g/dL in connection with clinical symptoms; 2) a transfusion was required; 3) bleeding led to interruption of treatment or death; or 4) intracranial bleeding.

6.2 Overdose

In a trial comparing FRAGMIN 5000 IU once daily to FRAGMIN 2500 IU once daily in patients undergoing surgery for malignancy, the incidence of bleeding reactions was 4.6% and 3.6%, respectively (n.s.). In a trial comparing FRAGMIN 5000 IU once daily to heparin 5000 IU twice daily, in the malignancy subgroup the incidence of bleeding reactions was 3.2% and 2.7%, respectively for FRAGMIN and Heparin (n.s.).
Medical Patients with Severely Restricted Mobility During Acute Illness

Table 8 summarizes major bleeding reactions that occurred in a clinical trial of medical patients with severely restricted mobility during acute illness.

### Table 8: Bleeding Reactions in Medical Patients with Severely Restricted Mobility During Acute Illness

<table>
<thead>
<tr>
<th>Medical Patients with Severely Restricted Mobility</th>
<th>FRAGMIN 5000 IU once daily</th>
<th>Placebo once daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Major Bleeding Reactions1 at Day 14</td>
<td>8/1846 (0.4)</td>
<td>0/1833 (0)</td>
</tr>
<tr>
<td>Major Bleeding Reactions2 at Day 21</td>
<td>9/1846 (0.5)</td>
<td>3/1833 (0.2)</td>
</tr>
</tbody>
</table>

1. A bleeding event was considered major if: 1) it was accompanied by a decrease in hemoglobin of ≥2 g/dL in connection with clinical symptoms; 2) intraocular, spinal/epidural, intracranial, or retroperitoneal bleeding; 3) required transfusion of ≥2 units of blood products; 4) required significant medical or surgical intervention; or 5) led to death.

Three of the major bleeding reactions that occurred by Day 21 were fatal, all due to gastrointestinal hemorrhage (two patients in the group treated with FRAGMIN and one in the group receiving placebo).

Patients with Cancer and Acute Symptomatic Venous Thromboembolism

Table 9 summarizes the number of patients with bleeding reactions that occurred in the clinical trial of patients with cancer and acute symptomatic venous thromboembolism. A bleeding event was considered major if it: 1) was accompanied by a decrease in hemoglobin of ≥2 g/dL in connection with clinical symptoms; 2) occurred at a critical site (intraocular, spinal/epidural, intracranial, retroperitoneal, or pericardial bleeding); 3) required transfusion of ≥2 units of blood products; or 4) led to death. Minor bleeding was classified as clinically overt bleeding that did not meet criteria for major bleeding.

At the end of the six-month study, a total of 46 (13.6%) patients in the FRAGMIN arm and 62 (18.5%) patients in the OAC arm experienced any bleeding event. One bleeding event (hemoptysis in a patient in the FRAGMIN arm at Day 71) was fatal.

### Table 9: Bleeding Reactions (Major and Any) (As treated population)1

<table>
<thead>
<tr>
<th>Study period</th>
<th>FRAGMIN 200 IU/kg (max. 18,000 IU)</th>
<th>OAC FRAGMIN 200 IU/kg (max. 18,000 IU)</th>
<th>Number at risk</th>
<th>Patients with Major Bleeding n (%)</th>
<th>Patients with Any Bleeding n (%)</th>
<th>Number at risk</th>
<th>Patients with Major Bleeding n (%)</th>
<th>Patients with Any Bleeding n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total during study</td>
<td>338</td>
<td>19 (5.6)</td>
<td>46 (13.6)</td>
<td>335</td>
<td>12 (3.6)</td>
<td>62 (18.5)</td>
<td>28 (8.7)</td>
<td>60 (17.9)</td>
</tr>
<tr>
<td>Week 1</td>
<td>338</td>
<td>20 (6.0)</td>
<td>64 (19.0)</td>
<td>335</td>
<td>12 (3.6)</td>
<td>62 (18.5)</td>
<td>60 (17.9)</td>
<td>60 (17.9)</td>
</tr>
<tr>
<td>Weeks 2-4</td>
<td>332</td>
<td>9 (2.7)</td>
<td>17 (5.1)</td>
<td>321</td>
<td>0 (0.3)</td>
<td>62 (18.5)</td>
<td>50 (15.3)</td>
<td>60 (17.9)</td>
</tr>
<tr>
<td>Weeks 5-28</td>
<td>297</td>
<td>9 (3.0)</td>
<td>26 (8.8)</td>
<td>267</td>
<td>8 (2.8)</td>
<td>40 (15.0)</td>
<td>60 (17.9)</td>
<td>60 (17.9)</td>
</tr>
</tbody>
</table>

1. Patients with multiple bleeding episodes within any time interval were counted only once in that interval. However, patients with multiple bleeding episodes that occurred at different time intervals were counted once in each interval in which the event occurred.

Thrombocytopenia

[See Warnings and Precautions (5.2)]

### Elevations of Serum Transaminases

In FRAGMIN clinical trials supporting non-cancer indications, where hepatic transaminases were measured, asymptomatic increases in transaminase levels (SGOT/AST and SGPT/ALT) greater than three times the upper limit of normal of the laboratory reference range were seen in 4.7% and 4.2%, respectively, of patients during treatment with FRAGMIN.

In the FRAGMIN clinical trial of patients with cancer and acute symptomatic venous thromboembolism treated with FRAGMIN for up to 6 months, asymptomatic increases in transaminase levels, AST and ALT, greater than three times the upper limit of normal of the laboratory reference range were reported in 8.9% and 9.5% of patients, respectively. The frequencies of Grades 3 and 4 increases in AST and ALT, as classified by the National Cancer Institute, Common Toxicity Criteria (NCI-CTC) Scoring System, were 3% and 3.8%, respectively. Grades 2, 3, and 4 combined have been reported in 12% and 14% of patients, respectively.

### Other Allergic Reactions

Allergic reactions (i.e., pruritus, rash, fever, injection site reaction, bullous eruption) have occurred. Cases of anaphylactoid reactions have been reported.

Local Reactions: Pain at the injection site, the only non-bleeding event determined to be possibly or probably related to treatment with FRAGMIN and reported at a rate of at least 2% in the group treated with FRAGMIN, was reported in 4.5% of patients treated with FRAGMIN 5000 IU once daily vs 11.8% of patients treated with heparin 5000 U twice daily in the abdominal surgery trials. In the hip replacement trials, pain at injection site was reported in 12% of patients treated with FRAGMIN 5000 IU once daily vs 13% of patients treated with heparin 5000 U three times a day.

### 6.2 Post-Marketing Experience

The following adverse reactions have been identified during postapproval use of FRAGMIN. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Since first international market introduction in 1985, there have been more than 15 reports of epidural or spinal hematoma formation with concurrent use of dalteparin sodium, and local epidural anesthesia or spinal puncture. The majority of patients had postoperative indwelling epidural catheters placed for analgesia or received additional drugs affecting hemostasis. In some cases the hematoma resulted in long-term or permanent paralysis (partial or complete) [see Boxed Warning].

Skin necrosis has occurred. There have been cases of alopecia reported that improved on drug discontinuation.

### 7 DRUG INTERACTIONS

Use FRAGMIN with care in patients receiving oral anticoagulants, platelet inhibitors, and thrombolytic agents because of increased risk of bleeding [see Warnings and Precautions (5)].

### 8 USE IN SPECIFIC POPULATIONS

#### 8.1 Pregnancy

Pregnancy Category B

There are no adequate and well-controlled studies of FRAGMIN use in pregnant women. In reproductive and developmental toxicity studies, pregnant rats and rabbits received dalteparin sodium at intravenous doses up to 2400 IU/kg (14,160 IU/m²) (rats) and 4800 IU/kg (40,800 IU/m²) (rabbits). These exposures were 2 to 4 times (rats) and 4 times (rabbits) the human dose of 100 IU/kg dalteparin based on the body surface area. No evidence of impaired fertility or harm to the fetuses occurred in these studies. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Cases of “Gasing Syndrome” have occurred in premature infants when large amounts of benzyl alcohol have been administered (99-404 mg/kg/day). The 9.5 mL and the 3.8 mL multiple-dose vials of FRAGMIN contain 14 mg/mL of benzyl alcohol [see Warnings and Precautions (5.3)].

#### 8.3 Nursing Mothers

Based on limited published data dalteparin is minimally excreted in human milk. One study of 15 lactating women receiving prophylactic doses of dalteparin, in the immediate postpartum period, detected small amounts of anti-Xa activity (range <0.025-0.224). Oral absorption of LMWH is extremely low, but the clinical implications of this small amount of anticoagulant activity on a nursing infant are unknown. Caution should be exercised when FRAGMIN is administered to a nursing woman.

#### 8.4 Pediatric Use

Safety and effectiveness in pediatric patients have not been established.

#### 8.5 Geriatric Use

Of the total number of patients in clinical studies of FRAGMIN, 5516 patients were 65 years of age or older and 2237 were 75 or older. No overall differences in effectiveness were observed between these subjects and younger subjects. Some studies suggest that the risk of bleeding increases with age. Postmarketing surveillance and literature reports have not revealed additional differences in the safety of FRAGMIN between elderly and younger patients. Give careful attention to dosing intervals and concomitant medications (especially antiplatelet medications) in geriatric patients, particularly in those with low body weight (<45 kg) and those predisposed to decreased renal function [see Warnings and Precautions (5) and Clinical Pharmacology (12)].

### 10 OVERDOSE

An excessive dosage of FRAGMIN injection may lead to hemorrhagic complications. Therapy may generally be stopped by slow intravenous injection of protamine sulfate (1% solution), at a dose of 1 mg protamine for every 100 anti-Xa IU of FRAGMIN given. If the APTT measured 2 to 4 hours after the first infusion remains prolonged, a second infusion of 0.5 mg protamine sulfate per 100 anti-Xa IU of FRAGMIN may be administered. Even with these additional doses of protamine, the APTT may remain more prolonged than would usually be found following administration of unfractionated heparin. In all cases, the anti-Factor Xa activity is never completely neutralized (maximum about 60 to 75%).

Take particular care to avoid overdosage with protamine sulfate. Administration of protamine sulfate can cause severe hypotensive and anaphylactoid reactions. Because fatal reactions, often resembling anaphylaxis, have been reported with protamine sulfate, give protamine sulfate only when resuscitation techniques and treatment for anaphylactic shock are readily available. For additional information, consult the labeling of Protamine Sulfate Injection, USP, products.
11 DESCRIPTION

Dalteparin sodium injection is a sterile, low molecular weight heparin. It is available in single-dose, prefilled syringes preassembled with a needle guard device, and multiple-dose vials. With reference to the W.H.O. First International Low Molecular Weight Heparin Reference Standard, each syringe contains either 2500, 5000, 7500, 10,000, 12,500, 15,000 or 18,000 anti-Factor Xa international units (IU), equivalent to 16, 32, 48, 64, 80, 96 or 115.2 mg dalteparin sodium, respectively. Each multiple-dose vial contains either 10,000 or 25,000 anti-Factor Xa IU per 1 mL (equivalent to 64 or 160 mg dalteparin sodium, respectively), for a total of 95,000 anti-Factor Xa IU per vial.

Each prefilled syringe also contains Water for Injection and sodium chloride, when required, to maintain physiologic ionic strength. The prefilled syringes are preservative-free. Each multiple-dose vial also contains Water for Injection and 14 mg of benzyl alcohol per mL as a preservative. The pH of both formulations is 5.0 to 7.5 [see Dosage Forms and Strengths (3) and How Supplied (16)].

Dalteparin sodium is produced through controlled nitrous acid depolymerization of sodium heparin from porcine intestinal mucosa followed by a chromatographic purification process. It is composed of strongly acidic sulfated polysaccharide chains (oligosaccharides, containing 2,5-anhydro-ε-mannitol residues as end groups) with an average molecular weight of 5000 and about 90% of the material within the range 2000–9000. The molecular weight distribution is:

<table>
<thead>
<tr>
<th>Molecular Weight Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;3000 daltons</td>
<td>3.0–15%</td>
</tr>
<tr>
<td>3000 to 8000 daltons</td>
<td>65.0–78.0%</td>
</tr>
<tr>
<td>&gt;8000 daltons</td>
<td>14.0–26.0%</td>
</tr>
</tbody>
</table>

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

Dalteparin is a low molecular weight heparin with antithrombotic properties. It acts by enhancing the inhibition of Factor Xa and thrombin by antithrombin. In humans, dalteparin potentiates preferentially the inhibition of coagulation Factor Xa, while only slightly affecting the activated partial thromboplastin time (APTT).

12.2 Pharmacodynamics

Doses of FRAGM IN Injection of up to 10,000 anti-Factor Xa IU administered subcutaneously 2500, 5000, 7500, 10,000, 12,500, 15,000 or 18,000 anti-Factor Xa IU subcutaneously did not produce a significant change in platelet aggregation, fibrinolysis, or global clotting tests such as prothrombin time (PT), thrombin time (TT) or APTT. Subcutaneous administration of doses of 5000 IU twice daily of FRAGM IN for seven consecutive days to patients undergoing abdominal surgery did not markedly affect APTT, Platelet Factor 4 (PF4), or lipoprotein lipase.

12.3 Pharmacokinetics

Mean peak levels of plasma anti-Factor Xa activity following single subcutaneous doses of 2500, 5000, and 10,000 IU were 0.19 ± 0.04, 0.41 ± 0.07 and 0.82 ± 0.10 IU/mL, respectively, and were attained in about 4 hours in most subjects. Absolute bioavailability in healthy volunteers, measured as the anti-Factor Xa activity, was 87 ± 6%. Increasing the dose from 2500 to 10,000 IU resulted in an overall increase in anti-Factor Xa AUC that was greater than proportional by about one-third. Peak anti-Factor Xa activity increased more or less linearly with dose over the same dose range. There appeared to be no appreciable accumulation of anti-Factor Xa activity with twice-daily dosing of 100 IU/kg subcutaneously for up to 7 days. The volume of distribution for dalteparin anti-Factor Xa activity was 40 to 60 mL/kg. The mean plasma clearances of dalteparin anti-Factor Xa activity in normal volunteers following single intravenous bolus doses of 30 and 120 anti-Factor Xa IU/kg were 24.6 ± 5.4 and 15.6 ± 2.4 mL/hr/kg, respectively. The corresponding mean disposition half-lives were 1.47 ± 0.3 and 2.5 ± 0.3 hours.

Following intravenous doses of 40 and 60 IU/kg, mean terminal half-lives were 2.1 ± 0.3 and 2.3 ± 0.4 hours, respectively. Longer apparent terminal half-lives (3 to 5 hours) are observed following subcutaneous dosing, possibly due to delayed absorption. In patients with chronic renal insufficiency requiring hemodialysis, the mean terminal half-life of anti-Factor Xa activity following a single intravenous dose of 5000 IU FRAGM IN was 5.7 ± 2.0 hours, i.e. considerably longer than values observed in healthy volunteers, therefore, greater accumulation can be expected in these patients.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenicity, Mutagenesis, Impairment of Fertility

Dalteparin sodium has not been tested for its carcinogenic potential in long-term animal studies. It was not mutagenic in the in vitro Ames Test, mouse lymphoma cell forward mutation test and human lymphocyte chromosomal aberration test and in the in vitro mouse micronucleus test. Dalteparin sodium at subcutaneous doses up to 1200 IU/kg (7080 IU/m²) did not affect the fertility or reproductive performance of male and female rats.

14 CLINICAL STUDIES

14.1 Prophylaxis of Ischemic Complications in Unstable Angina and Non-Q-Wave Myocardial Infarction

In a double-blind, randomized, placebo-controlled clinical trial, patients who recently experienced unstable angina with EKG changes or non-Q-wave myocardial infarction (MI) were randomized to FRAGM IN Injection 120 IU/kg or placebo every 12 hours subcutaneously. In this trial, unstable angina was defined to include only angina with EKG changes. All patients, except when contraindicated, were treated concurrently with aspirin (75 mg once daily) and beta blockers. Treatment was initiated within 72 hours of the event (the majority of patients received treatment within 24 hours) and continued for 5 to 8 days. A total of 1508 patients were enrolled and treated; 746 received FRAGM IN and 762 received placebo. The mean age of the study population was 68 years (range 40 to 90 years) and the majority of patients were white (99.7%) and male (63.9%). The combined incidence of the endpoint of death or myocardial infarction was lower for FRAGM IN compared with placebo at 6 days after initiation of therapy. These results were observed in an analysis of all-randomized and all-treated patients. The combined incidence of death, MI, need for intravenous heparin or intravenous nitroglycerin, acute myocardial infarction, rethrombolysis was also lower for FRAGM IN than for placebo (see Table 10).

<table>
<thead>
<tr>
<th>Table 10</th>
<th>Efficacy of FRAGM IN in the Prophylaxis of Ischemic Complications in Unstable Angina and Non-Q-Wave Myocardial Infarction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication</td>
<td>Dosing Regimen</td>
</tr>
<tr>
<td>All Treated Unstable Angina and Non-Q-Wave MI Patients</td>
<td>120 IU/kg/every 12 hr subcutaneous</td>
</tr>
<tr>
<td>Primary Endpoints - 6 day timepoint Death, MI</td>
<td>13/741 (1.8)</td>
</tr>
<tr>
<td>Secondary Endpoints - 6 day timepoint Death, MI, intravenous heparin, i.v. nitroglycerin, Revascularization</td>
<td>59/739 (8.0)</td>
</tr>
</tbody>
</table>

*p-value = 0.001

In a second randomized, controlled trial designed to evaluate long-term treatment with FRAGM IN (days 6 to 45), data were also collected comparing 1-week (5 to 8 days) treatment of FRAGM IN 120 IU/kg every 12 hours subcutaneously with heparin at an APTT-adjusted dosage. All patients, except when contraindicated, were treated concurrently with aspirin (100 to 165 mg per day). Of the 1499 patients enrolled, 1482 patients were treated; 751 received FRAGM IN and 731 received heparin. The mean age of the study population was 64 years (range 25 to 92 years) and the majority of patients were white (96.0%) and male (64.2%). The incidence of the combined endpoint of death, myocardial infarction, or recurrent angina during this 1-week treatment period (5 to 8 days) was 9.3% for FRAGM IN and 7.6% for heparin (p=0.323).

14.2 Prophylaxis of Deep Vein Thrombosis in Patients Following Hip Replacement Surgery

In an open-label randomized study, FRAGM IN 5000 IU administered once daily subcutaneously was compared with warfarin sodium, administered orally, in patients undergoing hip replacement surgery. Treatment with FRAGM IN was initiated with a 2500 IU dose subcutaneously within 2 hours before surgery, followed by a 2500 IU dose subcutaneously the evening of the day of surgery. Then, a dosing regimen of FRAGM IN 5000 IU subcutaneously once daily was initiated on the first postoperative day. The first dose of warfarin sodium was given the evening before surgery, then continued daily at a dose adjusted for INR 2 to 3. Treatment in both groups was then continued for 5 to 9 days postoperatively. Of the 580 patients enrolled, 553 were treated and 550 underwent surgery. Of those who underwent surgery, 271 received FRAGM IN and 279 received warfarin sodium. The mean age of the study population was 63 years (range 20 to 92 years) and the majority of patients were white (91.1%) and female (52.9%). The incidence of deep vein thrombosis (DVT), as determined by evaluable venography, was significantly lower for the group treated with FRAGM IN compared with patients treated with warfarin sodium (see Table 11).
In a second single-center, double-blind study of patients undergoing hip replacement surgery, FRAGM IN 5000 IU once daily subcutaneously starting the evening before surgery, was compared with heparin 5000 U subcutaneously three times a day, starting the morning of surgery. Treatment in both groups was continued for up to 9 days postoperatively. Of the 140 patients enrolled, 130 were treated and 136 underwent surgery. Of those who underwent surgery, 67 received FRAGM IN and 69 received heparin. The mean age of the study population was 69 years (range 42 to 87 years) and the majority of patients were female (58.8%). In the intent-to-treat analysis, the incidence of proximal DVT was significantly lower for patients treated with FRAGM IN compared with patients treated with heparin (6.67 vs 18.69; p=0.012). The incidence of pulmonary embolism detected by lung scan was also significantly lower in the group treated with FRAGM IN (9.67 vs 19.69; p=0.032).

A third multi-center, double-blind, randomized study evaluated a postoperative dosing regimen of FRAGM IN for thromboprophylaxis following total hip replacement surgery. Patients received either FRAGM IN or warfarin sodium, randomized into one of three treatment groups. One group of patients received the first dose of FRAGM IN 2500 IU subcutaneous within 2 hours before surgery, followed by another dose of FRAGM IN 2500 IU subcutaneous at least 4 hours (6.6 ± 2.3 hr) after surgery. Another group received the first dose of FRAGM IN 2500 IU subcutaneous at least 4 hours (6.6 ± 2.4 hr) after surgery. Then, both of these groups began a dosing regimen of FRAGM IN 5000 IU once daily subcutaneous on postoperative day 1. The third group of patients received warfarin sodium the evening of the day of surgery, then continued daily at a dose adjusted to maintain INR 2 to 3. Treatment for all groups was continued for 4 to 8 days postoperatively, after which time all patients underwent bilateral venography.

In the total enrolled study population of 1501 patients, 1472 patients were treated; 496 received FRAGM IN (first dose before surgery), 487 received FRAGM IN (first dose after surgery) and 489 received warfarin sodium. The mean age of the study population was 63 years (range 18 to 91 years) and the majority of patients were white (94.4%) and female (51.8%).

Administration of the first dose of FRAGM IN after surgery was as effective in reducing the incidence of thromboembolic reactions as administration of the first dose of FRAGM IN before surgery (4/436 vs 37/338; p=0.448). Both dosing regimens of FRAGM IN were more effective than warfarin sodium in reducing the incidence of thromboembolic reactions following hip replacement surgery.

### 14.3 Prophylaxis of Deep Vein Thrombosis Following Abdominal Surgery in Patients at Risk for Thromboembolic Complications

Abdominal surgery patients at risk include those who are over 40 years of age, obese, undergoing surgery under general anesthesia lasting longer than 30 minutes, or who have additional risk factors such as malignancy or a history of deep vein thrombosis or pulmonary embolism.

FRAGM IN administered once daily subcutaneously beginning prior to surgery and continued for 5 to 10 days after surgery, reduced the risk of DVT in patients at risk for thromboembolic complications in two double-blind, randomized, controlled clinical trials performed in patients undergoing major abdominal surgery. In the first study, a total of 204 patients were enrolled and treated; 102 received FRAGM IN and 102 received placebo. The mean age of the study population was 64 years (range 40 to 98 years) and the majority of patients were female (64.9%). In the second study, a total of 391 patients were enrolled and treated; 195 received FRAGM IN and 196 received heparin. The mean age of the study population was 64 years (range 30 to 88 years) and the majority of patients were female (91.9%). FRAGM IN 2500 IU was superior to placebo and similar to heparin in reducing the risk of DVT (see Tables 12 and 13).

---

### Table 11

<table>
<thead>
<tr>
<th>Indication</th>
<th>FRAGM IN 5000 IU once daily subcutaneous n (%)</th>
<th>Warfarin Sodium once daily oral n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Treated Hip Replacement Surgery Patients</td>
<td>271</td>
<td>279</td>
</tr>
<tr>
<td>Treatment Failures in Evaluable Patients</td>
<td>28/192 (14.6)</td>
<td>49/190 (25.8)</td>
</tr>
<tr>
<td>Proximal DVT</td>
<td>10/192 (5.2)</td>
<td>16/190 (8.4)</td>
</tr>
<tr>
<td>PE</td>
<td>2/271 (0.7)</td>
<td>2/279 (0.7)</td>
</tr>
</tbody>
</table>

1. The daily dose on the day of surgery was divided: 2500 IU was given two hours before surgery and again in the evening of the day of surgery.
2. Warfarin sodium dosage was adjusted to maintain a prothrombin time index of 1.4 to 1.5, corresponding to an International Normalized Ratio (INR) of approximately 2.5.
3. p-value = 0.006
4. p-value = 0.185

---

### Table 12

<table>
<thead>
<tr>
<th>Indication</th>
<th>FRAGM IN 2500 IU once daily subcutaneous n (%)</th>
<th>Placebo once daily subcutaneous n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Treated Abdominal Surgery Patients</td>
<td>102</td>
<td>102</td>
</tr>
<tr>
<td>Treatment Failures in Evaluable Patients</td>
<td>4/91 (4.4)</td>
<td>16/91 (17.6)</td>
</tr>
<tr>
<td>Proximal DVT</td>
<td>0</td>
<td>5/91 (5.5)</td>
</tr>
<tr>
<td>Distal DVT</td>
<td>4/91 (4.4)</td>
<td>11/91 (12.1)</td>
</tr>
<tr>
<td>PE</td>
<td>0</td>
<td>2/91 (2.2)</td>
</tr>
</tbody>
</table>

p-value = 0.008

1. Both patients also had DVT, 1 proximal and 1 distal

---

### Table 13

<table>
<thead>
<tr>
<th>Indication</th>
<th>FRAGM IN 2500 IU once daily subcutaneous n (%)</th>
<th>Heparin 5000 U twice daily subcutaneous n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Treated Abdominal Surgery Patients</td>
<td>195</td>
<td>196</td>
</tr>
<tr>
<td>Treatment Failures in Evaluable Patients</td>
<td>7/178 (3.9)</td>
<td>7/174 (4.0)</td>
</tr>
<tr>
<td>Proximal DVT</td>
<td>3/178 (1.7)</td>
<td>4/174 (2.3)</td>
</tr>
<tr>
<td>Distal DVT</td>
<td>3/178 (1.7)</td>
<td>3/174 (1.7)</td>
</tr>
<tr>
<td>PE</td>
<td>1/178 (0.6)</td>
<td>0</td>
</tr>
</tbody>
</table>

p-value = 0.74

---

### Table 14

<table>
<thead>
<tr>
<th>Indication</th>
<th>FRAGM IN 2500 IU once daily subcutaneous n (%)</th>
<th>FRAGM IN 5000 IU once daily subcutaneous n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Treated Abdominal Surgery Patients</td>
<td>696</td>
<td>679</td>
</tr>
<tr>
<td>Treatment Failures in Evaluable Patients</td>
<td>99/656 (15.1)</td>
<td>60/645 (9.3)</td>
</tr>
<tr>
<td>Proximal DVT</td>
<td>18/657 (2.7)</td>
<td>14/646 (2.2)</td>
</tr>
<tr>
<td>Distal DVT</td>
<td>80/657 (12.2)</td>
<td>41/646 (6.3)</td>
</tr>
<tr>
<td>PE</td>
<td>1/674 (0.1)</td>
<td>1/669 (0.1)</td>
</tr>
<tr>
<td>Fatal</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Major abdominal surgery with malignancy
2. p-value = 0.001

---

### 14.4 Prophylaxis of Deep Vein Thrombosis in Medical Patients at Risk for Thromboembolic Complications Due to Severely Restricted Mobility During Acute Illness

In a double-blind, multi-center, randomized, placebo-controlled clinical trial, general medical patients with severely restricted mobility who were at risk of venous thromboembolism were randomized to receive either FRAGM IN 5000 IU or placebo subcutaneously once daily during Days 1 to 14 of the study. These patients had an acute medical condition requiring a projected hospital stay of at least 4 days, and were confined to bed during waking hours. The study included patients with congestive heart failure (NYHA Class III or IV), acute respiratory failure not requiring ventilatory support, and the following acute conditions with at least one risk factor occurring in >1% of treated patients: acute infection (excluding septic shock), acute rheumatic disorder, acute lumbar or sciatic pain, vertebral compression, or acute arthritis of the lower extremities. Risk factors include >75 years of age, cancer, previous DVT/PE, obesity and chronic venous insufficiency. A total of 3681 patients
were enrolled and treated: 1848 received FRAGMENT and 1833 received placebo. The mean age of the study population was 69 years (range 26 to 99 years), 92.1% were white and 51.9% were female. The primary efficacy endpoint was evaluated at Day 21 and was defined as at least one of the following within Days 1 to 21 of the study: asymptomatic DVT (diagnosed by compression ultrasound), a confirmed symptomatic DVT, a confirmed pulmonary embolism or sudden death. The follow-up extended through Day 90.

When given at a dose of 5000 IU once a day subcutaneously, FRAGMENT significantly reduced the incidence of thromboembolic reactions including verified DVT by Day 21 (see Table 15). The prophylactic effect was sustained through Day 90.

### Table 15
Efficacy of FRAGMENT in the Prophylaxis of Deep Vein Thrombosis in Medical Patients with Severely Restricted Mobility During Acute Illness

<table>
<thead>
<tr>
<th>Indication</th>
<th>Dosing Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Treated Medical Patients During Acute Illness</td>
<td>FRAGMENT 5000 IU once daily subcutaneous n (%) Placebo once daily subcutaneous n (%)</td>
</tr>
<tr>
<td>Treatment failure in evaluable patients (Day 21)</td>
<td>1848                             1833</td>
</tr>
<tr>
<td>Total thromboembolic reactions (Day 21)</td>
<td>37/1513 (2.5) 70/1470 (4.8)</td>
</tr>
<tr>
<td>Total DVT</td>
<td>32/1508 (2.1) 64/1464 (4.4)</td>
</tr>
<tr>
<td>Proximal DVT</td>
<td>29/1518 (1.9) 60/1474 (4.1)</td>
</tr>
<tr>
<td>Symptomatic VTE</td>
<td>10/759 (0.6) 17/740 (1.0)</td>
</tr>
<tr>
<td>PE</td>
<td>5/1759 (0.3) 6/1740 (0.3)</td>
</tr>
<tr>
<td>Sudden Death</td>
<td>5/1829 (0.3) 3/1807 (0.2)</td>
</tr>
</tbody>
</table>

1 Defined as DVT (diagnosed by compression ultrasound at Day 21 + 3), confirmed symptomatic DVT, confirmed PE or sudden death.
2 p-value = 0.0015

### Table 16
Recurrent VTE in Patients with Cancer (Intention to treat population)

<table>
<thead>
<tr>
<th>Study Period</th>
<th>FRAGMENT arm</th>
<th>OAC arm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FRAGMENT 200 IU/kg (max. 18,000 IU) subcutaneous once daily x 1 month, then 150 IU/kg (max. 18,000 IU) subcutaneous once daily x 5-7 days and OAC for 6 months (target INR 2-3)</td>
<td>FRAGMENT 200 IU/kg (max. 18,000 IU) subcutaneous once daily x 5-7 days and OAC for 6 months (target INR 2-3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number at Risk</th>
<th>Patients with VTE</th>
<th>%</th>
<th>Number at Risk</th>
<th>Patients with VTE</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>338</td>
<td>27</td>
<td>8.0</td>
<td>338</td>
<td>53</td>
</tr>
<tr>
<td>Week 1</td>
<td>338</td>
<td>5</td>
<td>1.5</td>
<td>338</td>
<td>8</td>
</tr>
<tr>
<td>Weeks 2-4</td>
<td>331</td>
<td>6</td>
<td>1.8</td>
<td>327</td>
<td>25</td>
</tr>
<tr>
<td>Weeks 5-28</td>
<td>307</td>
<td>16</td>
<td>5.2</td>
<td>284</td>
<td>20</td>
</tr>
</tbody>
</table>

1 Three patients in the FRAGMENT arm and 5 patients in the OAC arm experienced more than 1 VTE over the 6-month study period.

In the intent-to-treat population that included all randomized patients, the primary comparison of the cumulative probability of the first VTE recurrence over the 6-month study period was statistically significant (p < 0.01) in favor of the FRAGMENT arm, with most of the treatment difference evident in the first month.

### 16 HOW SUPPLIED/STORAGE AND HANDLING
After first penetration of the rubber stopper, store the multiple-dose vials at room temperature for up to 2 weeks.