Heparins

What is heparin?

Heparin is an anticoagulant or blood thinning drug that reduces the chance of blood clots forming. It is given through an intravenous (IV) line in the arm.

What is it used for?

Heparin is used to prevent clotting during bypass surgery and angioplasty.[1] It is also given to heart attack patients treated with some clot busters, and it is used to treat or prevent blood clots in the deep veins of the lower legs or in the lungs.

What are the risks of heparin?

Because heparin affects the blood's ability to clot, it can lead to bleeding problems. Women and elderly patients tend to have more bleeding problems than men or younger people treated with heparin.[1] Adjusting doses for people with smaller body weights helps reduce the risk of bleeding problems. Lower doses of heparin are also used when it is combined with other blood thinning drugs such as the super aspirins (glycoprotein IIb/IIIa inhibitors). Heparin can increase the risk of hemorrhagic stroke — bleeding in the brain — especially when it is combined with clot busters. [2]

Heparin may trigger a type of allergic reaction that results in a dangerously low level of platelets (a type of blood cell involved in clotting). Platelets are also called thrombocytes and this reaction is called heparin-induced-thrombocytopenia (HIT for short). If you are given heparin in the hospital, you will have your blood drawn and tested every day to see if your platelet counts are normal.

Heparin Quick Reference Table

HEPARIN

http://www.spl-pharma.com/PDF/tds-heps.pdf

(check with manufacturer for more specific information)

How is it given:

Injected into an IV line or under the skin

What is it used for:

- To prevent clotting during cardiac surgery
- To treat or prevent blood clots in the deep veins of the lower legs (deep vein thrombosis) in people at ris
- To treat or prevent blood clot in the lung (pulmonary embolism)
- To prevent or treat blood clots associated with rapid, irregular heartbeat (atrial fibrillation)

You should not be treated with it if:

- You are bleeding severely.
- You have a dangerously low platelet count.

Pregnancy/nursing:

It is not known whether heparin is safe for pregnant women. Heparin is not excreted in breast milk.

What is low molecular weight heparin (LMWH)?

Low molecular weight heparin (LMWH) is an anticoagulant like heparin. Anticoagulants reduce the likelihood of blood clots forming.

Finding the right dose of heparin for each patient is tricky; hospital staff must run blood tests and make dose adjustments if necessary. LMWH does not require such close monitoring. It is also easier to administer: LMWH is injected under the skin twice a day whereas regular heparin is given through an IV line in the arm.

What is LMWH used for?

LMWH is used to treat blood clots in the deep veins of the lower legs (deep vein thrombosis, or DVT) and to treat unstable angina and a mild heart attack. Research is ongoing to see whether LMWH can be substituted for regular heparin. There is evidence that LMWH is as good as, if not better, than heparin in some cases – in the treatment of unstable angina, for example.[1] This benefit was seen in women as well as men.

However, LMWH is not significantly better than regular heparin during angioplasty and bypass surgery. Results vary for the different types of LMWH. For example, studies found enoxaparin (Lovenox) to be better than regular heparin, but dalteparin (Fragmin) was not.[3] Regular heparin is a tried and trusted medication; it was the medication used in most research studies on super aspirins (glycoprotein IIb/IIIa inhibitors). For these reasons, LMWHs have yet to completely replace regular heparin. LMWH is generally preferred for people with unstable angina (chest pain) or a mild heart attack, unless they are likely to undergo bypass surgery.

LMWH Quick Reference Table

LMWH
(Check with manufacturer for specific information)

Generic:

Enoxaparin

Dalteparin

Brand:

Lovenox
http://www.lovenox.com/consumer/default.aspx

Fragmin
www.fragmin.com/

How is it given:

Injected under the skin

Injected under the skin

What is it used for :

To treat blood clots in the deep veins of the lower legs (deep vein thrombosis)

To treat unstable angina and a mild heart attack

You should not be treated with it if:

- You are bleeding severely
- You have a low platelet count
- You are allergic to heparin or pork products
- You should not receive Fragmin if you are undergoing local anesthesia.

Pregnancy/nursing:

It is not known whether these medications are safe during pregnancy or nursing.

What is bivalirudin?

Direct thrombin inhibitors are another type of anticoagulant or blood thinner. Bivalirudin (Angiomax) is the most common. These medications not only reduce the likelihood of blood clots forming, but they also prevent clots that have already formed from getting bigger.

What is it used for?

Direct thrombin inhibitors have been approved to treat heparin-induced-thrombocytopenia, a

type of allergic reaction triggered by regular heparin that results in a dangerously low level of platelets (blood cells involved in clotting, also called thrombocytes).[1] They are still being investigated as potential replacements for regular heparin.

When all the studies on direct thrombin inhibitors were pooled, bivalirudin was superior to regular heparin at reducing the risk of having a heart attack.[4] This pooled analysis included people with unstable angina, heart attack, and those undergoing angioplasty or stenting. The benefits were greatest for people who underwent angioplasty and stenting. In these patients, bivalirudin was less likely to cause bleeding problems than regular heparin. In contrast, bivalirudin actually increased the risk of bleeding problems in people with unstable angina or heart attack. Most of the research studies included in this analysis were done before the routine use of super aspirins (glycoprotein IIb/IIIa inhibitors) so it remains to be seen how bivalirudin would perform in combination with super aspirins. These pooled results did not show any benefit for direct thrombin inhibitors, other than bivalirudin compared with regular heparin.
[5]

Direct thrombin inhibitors are not generally given to heart attack patients. Studies show that combining bivalirudin with clot busters reduces the risk of subsequent heart attack compared with regular heparin. However, this benefit is outweighed by a significant increase in bleeding problems.[6] Direct antithrombins may be combined with the clot buster streptokinase in heart attack patients who are allergic to regular heparin. [7]

As with LMWH, more research needs to be done before physicians are likely to switch from regular heparin to bivalirudin.

Direct Thrombin Inhibitor Quick Reference Table

DIRECT THROMBIN INHIBITORS
(Check with manufacturer for specific information)

Bivalirudin
(previously Hirulog)

Lepirudin
(recombinant hirudin)

Brand:

Angiomax

Argatroban

Refludan

Given:

Injected into an IV line

Injected into an IV line

Injected into an IV line

What is it used for:

To treat people with unstable angina undergoing angioplasty/stenting

To treat people with heparin-induced thrombocytopenia (HIT)
To treat patients undergoing angioplasty/stenting at risk of HIT

To treat people with (HIT)

You should not be treated with it if :

- You are bleeding a lot
- You are allergic to heparin

Pregnancy/ nursing:

It is not known whether these medications are safe during pregnancy or nursing.

What is warfarin?

Warfarin (Coumadin) is an anticoagulant that interferes with the blood's ability to clot.

What is it used for?

Warfarin is approved to reduce the risk of death, another heart attack or stroke after a heart attack, and to treat or prevent blood clots in the deep veins of the lower legs (deep vein thrombosis, or DVT) and in the lung (pulmonary embolism). Warfarin also prevents blood clots in people with a rapid, irregular heartbeat (atrial fibrillation) or those who have a mechanical heart valve.

Warfarin is not routinely prescribed after a heart attack. There is some evidence that warfarin combined with aspirin is better than aspirin alone at preventing another heart attack or stroke after a heart attack.[8] However, some studies found no additional benefit for the combined

treatment. [9, 10] Warfarin is taken orally as a pill — everyone responds a little differently, so drug doses are tailored for each patient. If you are prescribed warfarin, you will need to have regular blood tests to ensure you are not taking too much or too little.

[1]

Because of this inconvenience, many people prescribed long-term warfarin stop taking it. It is much easier to take aspirin alone for preventive purposes. Research is now focused on combining aspirin with the newer antiplatelets such as clopidogrel (Plavix). These newer antiplatelet drugs are taken in pill form without the need for monitoring tests. Although warfarin may be used to prevent future heart attacks or strokes in women who cannot take daily aspirin — because of allergy, for example — physicians prefer to prescribe the newer antiplatelets instead.

Women who have had a heart valve replacement may need to take warfarin for the rest of their lives.

What are the risks of warfarin use?

Warfarin can cause excessive bleeding from even minor cuts such as a razor nick. If you have to take warfarin, you'll be advised to avoid activities that might cause injury. Your diet can affect how well warfarin works. You should restrict foods that contain vitamin K, a vitamin involved in blood clotting. These foods include green vegetables (such as lettuce and broccoli), avocado and egg yolks. People taking warfarin for 3 to 10 weeks or longer may develop purple toe syndrome. The toes and feet turn a dark, purple, or mottled color that fades if you raise your legs. This side effect can be reversed, but if left untreated, it may cause gangrene.

Warfarin Quick Reference Table

Warfarin
(check with manufacturer for more details)

Generic:

Warfarin

Brand:

Coumadin

http://www.coumadin.com/

How is it given:

Oral

What is it used for:
To reduce the risk of death, another heart attack, or stroke after a heart attack
To treat or prevent blood clots in the deep veins of the lower legs (deep vein thrombosis) and in the lung
To prevent or treat blood clots associated with rapid, irregular heartbeat (atrial fibrillation) or replacemen

You should not take it if:

- You are pregnant
- You recently underwent surgery
- You have bleeding problems

Pregnancy/nursing:

Not to be used during pregnancy; some evidence suggests that warfarin is not excreted in breast milk.

What is aspirin?

Aspirin is an antiplatelet medication. Antiplatelets make the blood less sticky, which helps prevent blood clots from forming.

Can aspirin help during a heart attack?

Studies show that taking aspirin during a heart attack reduces the risk of dying by 23%.[11] A chewed aspirin (162-325 mg) helps prevent further clots developing. Research shows that women having a heart attack are just as likely to benefit from aspirin as men.

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Can aspirin prevent another heart attack in women who've already had one?

Women who have already had a heart attack, stroke, or undergone angioplasty or bypass surgery should take daily aspirin (75-325 mg).7, [13] Aspirin reduces the chances of further heart problems by 25%. [14] Although aspirin sometimes works as a painkiller, it does not reduce chest pain (angina). It does reduce the risk of dying for people who suffer from angina.

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One small study suggested that aspirin may not be as effective in women with angina compared

with men. The women taking aspirin were more likely to suffer episodes of chest pain than men.

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If I'm at risk for heart disease, should I take aspirin?

What about women who have not had a heart attack or stroke — should they take a daily

aspirin? The most recent guidelines for the prevention of cardiovascular disease in women

recommend daily aspirin (75-162 mg) for women at high-risk for coronary artery disease.[17] High risk is defined as a greater than 20% risk of developing heart disease within 10 years. Women at intermediate risk (10% to 20% 10-year risk) may also take aspirin provided their blood pressure is under control. To find out if you meet the “at risk” criteria, use this risk calculator. People with type 2 diabetes have a high risk of developing heart disease and may be told to take daily aspirin.

Should women at low risk for heart disease take aspirin?

Because many of the early prevention studies on aspirin did not include women, an expert panel noted that the benefits are less established for healthy middle-aged women than for men.[1][8]

To address this gap, the Women's Health Study enrolled approximately 40,000 healthy women 45 years of age or older and gave them 100 mg of aspirin or a dummy pill to take every other day.[19]

After 10 years, there was no difference in the risk of having a heart attack or dying from cardiovascular disease between the two groups. This is in contrast to the benefits seen for

healthy men in previous studies. The results did not differ whether women were menopausal or taking hormones, but older age did have an effect. Women taking aspirin who were older than 65 years at the beginning of the study experienced a 34% reduction in the risk of having a heart attack.

Does aspirin prevent stroke?

The Women's Health Study did show that aspirin could prevent stroke, a benefit that has not been shown in men. Women taking aspirin were 24% less likely to suffer ischemic stroke, the most common type of stroke caused by a blood clot in an artery of the brain.19 Because aspirin thins the blood, there was a slight increase in the risk of hemorrhagic stroke or bleeding in the brain; however, this was not statistically significant, and overall aspirin reduced the risk of any stroke by 17%.

How does aspirin work differently in men and women?

Since the Women's Health Study had different results to previous studies in men, researchers decided to further investigate the gender differences. They pooled the results of six studies on aspirin involving almost 95,500 people (more than half were women) who did not already have heart disease, but who may have had risk factors. The results showed that in women aspirin reduced the risk of any stroke by 17%, but did not lower the risk of heart attack.[20] Men taking aspirin saw a 32% reduction in heart attack risk, but no stroke benefit.

Aspirin reduced women's risk of the most common type of stroke (ischemic) risk by 24%. For hemorrhagic stoke (one caused by a burst blood vessel in the brain), aspirin had no effect on a women's risk. However, aspirin *increased* a man's risk of hemorrhagic stroke by 69%. The researchers believe the sex difference may have several explanations. First, women experience more strokes than heart attacks, while men experience more heart attacks than strokes. Second, men and women process aspirin differently; women are more likely to experience aspirin resistance, in which a person's blood does not thin in response to the aspirin.

What is the best daily dose?

Despite the wealth of research supporting the use of daily aspirin in people at risk for heart disease, it's not clear what dose is best. This is because the studies conducted so far have used a wide variety of doses. It has been shown that higher doses (500 mg to 1.5g) are no better at preventing platelets from sticking than doses in the range of 75 to 325 mg.[14] The research also suggests that baby aspirin (81 mg) is as effective as higher doses. Lower doses are generally preferred because they are less likely to trigger serious side effects such as bleeding in the stomach. However, low doses may still cause gastric side effects including nausea.

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If your physician prescribes daily aspirin, you can discuss which dose works best for you.

What are the risks of aspirin use?

Regular aspirin is associated with serious side effects, particularly bleeding in the stomach. The risk of this side effect is higher for people older than 70 years of age. There was a 40% increase in the risk of serious gastrointestinal bleeding requiring a blood transfusion in women taking aspirin in the Women's Health Study.[19] These women were also more likely to experience minor bleeding and bruising.

More common side effects include upset stomach and nausea. In a study conducted among male physicians, nearly 40% of the doctors assigned aspirin stopped taking it because of gastrointestinal problems (they were taking 325 mg every other day).[22] Enteric and buffered-coated aspirin preparations are touted as easier on the stomach but there is research suggesting they are not any safer.

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Taking regular aspirin reduces the risk of the most common type of stroke, ischemic stroke (when a blood clot lodges in a blood vessel in the brain). Conversely, aspirin slightly increases the risk of hemorrhagic stroke

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(bleeding in the brain) although this may be less of an issue in women than in men.

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You should not take daily aspirin (or most other painkillers) if you drink more than 3 alcoholic drinks per day. This combination increases your risk of liver damage and bleeding in the stomach.[13] If you are taking a nonsteroidal anti-inflammatory drug (NSAID, e.g., Aleve) regularly, to treat arthritis pain for example, you should not take daily aspirin. The risks of serious side effects and even death increase when daily aspirin is combined with regular NSAID

use. [25] Taking an occasional NSAID is fine. If you are prescribed daily aspirin to prevent a heart attack, you should avoid ibuprofen (Advil, Motrin) because it interferes with the cardioprotective effects of aspirin. [7]

Do the benefits of aspirin outweigh the risks?

In people at high risk for heart disease, the benefits of daily aspirin far outweigh the risks. That

is not the case for men and women at low-risk, which is why daily aspirin is not recommended for everyone and why you should not start taking it without discussing the risks with your healthcare provider. Healthy women who are at low-risk for heart disease should not take aspirin because the risks far outweigh any benefits.

Are some people resistant to aspirin?

Aspirin protects the heart by making the blood less likely to clot. However, laboratory tests have shown that aspirin doesn't work in some people. These people are deemed aspirin-resistant. One study found that among men and women taking aspirin, those who tested as aspirin-resistant were more than 3 times as likely to have a heart attack, stroke, or die than non–aspirin-resistant patients.[26] There was suggestive but not conclusive evidence that women were more likely than men to be aspirin-resistant. Blood and urine tests for aspirin-resistance are not routinely available, but there are a few in development.

Are women missing out on aspirin?

Research shows that the number of women taking aspirin has increased greatly in recent years.

A study of more than 25,000 people with coronary artery disease found that 81% were taking aspirin in 1999 compared with only 59% in 1995.[27] Even so, women were less likely than men to be taking aspirin. An analysis of nearly 3,000 postmenopausal women with heart disease found that those at the greatest risk for a heart attack or stroke were the least likely to be taking aspirin suggesting that there is still room for improvement.

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On the contrary, there is evidence showing that some healthy women may be taking aspirin inappropriately. An analysis from the Minnesota Heart Survey, which includes more than 20,000 people (more than half are women), found that 31% of women at low-risk for heart disease were taking daily aspirin even though it's more likely to cause harm in people at low-risk.[29]

Aspirin Quick Reference Table

Aspirin
(check with manufacturers for more details)

Generic:

Aspirin

Brand:

St Joseph (McNeil Consumer)

http://www.stjosephaspirin.com/products/index.jhtml

Ecotrin (Glaxo SmithKline)

http://ecotrin.com/

Bayer

http://www.bayeraspirin.com/

How it is given:

Oral

What it is used for:

To reduce the risk of death or ischemic stroke in people who already had an ischemic stroke (blood clot
To reduce the risk of dying during a heart attack
To reduce the risk of dying or having a heart attack in people who have already had a heart attack or wh
To reduce the risk of dying or having a heart attack in people with chronic stable angina (chest pain)

You should not be treated with it if:

- You are allergic to aspirin
- Children under the age of 12 years should never be given aspirin because of the risk of Reye's Syn

Pregnancy/nursing:

You should not take aspirin in the last 3 months of pregnancy unless your physician has told you it is saf

What is clopidogrel?

Clopidogrel (Plavix) is an antiplatelet. Antiplatelets make the blood less sticky, which helps prevent blood clots from forming.

What is it used for?

Clopidogrel is given to people after a heart attack. Studies comparing clopidogrel with aspirin found that is was slightly better at reducing the risk of heart attack, stroke, or death, particularly in people who already had heart surgery and people with diabetes.[30 31] Aspirin is such a well established and accepted treatment that clopidogrel is substituted for aspirin only in people who can't tolerate or are allergic to aspirin. Research now focuses on combining clopidogrel with

aspirin.

Is it better to take clopidogrel and aspirin rather than aspirin alone?

One study found that after a mild heart attack, people took both aspirin and clopidogrel for up to 1 year were less likely to have a heart attack, stroke, or die compared with patients taking aspirin alone.[32] If you have undergone angioplasty with or without stenting, you may also benefit

from taking both antiplatelets for up to 1 year. [33] Although there was a strong suggestion that women benefited just as well as men, the results for women did not reach statistical significance. Combining clopidogrel and aspirin increases the risk of bleeding problems compared with aspirin alone.

A 2006 study suggests that the 2 drug combination should not be used in everyone at risk for heart disease. This trial involved more than 15,500 people 45 years of age or older from 32 countries including the US who had been diagnosed with cardiovascular disease or had multiple risk factors.[34] After more than 2 years, there was no difference in the risk of heart attack, stroke,

or dying from heart disease between those who took clopidogrel and low-dose aspirin (75-162 mg) daily or low-dose aspirin plus a dummy pill. Indeed the 2 drug combination appeared to do more harm in the people who had risk factors. It actually increased their risk of dying (5.4% versus. 3.8%) or dying specifically from cardiovascular disease (3.9% versus 2.2%). Most of these people had risk factors such as smoking, high blood pressure, and high cholesterol, but had not been diagnosed with cardiovascular disease. However, the multiple risk factor group also included some people who had had a heart attack, stroke, or heart procedure in the distant past (more than 5 years past).

When stents, the tiny wire mesh tubes that are inserted into blocked arteries during angioplasty to help prop the artery open, are implanted, there is a risk of damage to the artery that may trigger the formation of a life threatening blood clot. To prevent this, clopidogrel is prescribed for at least 1 month for a bare metal stent, and 3 to 6 months for drug-coated stents.[7]

What are the risks of clopidogrel?

Because clopidogrel interferes with blood clotting, it increases the risk of bleeding problems.

One study found that people who had bypass surgery within 5 days of receiving clopidogrel were much more likely to have major bleeding problems than people who did not receive clopidogrel.[35] If you are undergoing bypass surgery, you should not take clopidogrel for 5 to 7 days before the procedure. Combining clopidogrel and aspirin increases the risk of bleeding problems compared with aspirin alone.

What is ticlopidine?

Ticlopidine (Ticlid) is another antiplatelet that is similar to clopidogrel. Ticlopidine has a number of serious side effects so it is rarely used as a first-line treatment. It causes side effects including diarrhea, nausea, and skin rash in as many as 20% of people who take it.[36] In rarer instances, ticlopidine may trigger a dangerously low white blood cell count (neutropenia), which can be life threatening. Another potentially fatal complication is thrombotic thrombocytopenic purpura (TTP) – a dangerously low platelet count accompanied by a skin rash and clots in the small blood vessels.

Clopidogrel & Ticlopidine Quick Reference Table

Clopidogrel & Ticlopidine
(check with manufacturer for more details)

Generic:

Clopidogrel

Ticlopidine

Brand:

Plavix

www.plavix.com

Ticlid

How is it given:

Oral

Oral

What is it used for:

To treat a heart attack, stroke, or peripheral arterial disease

In patients who have undergone angioplasty/stenting or bypass surgery

To reduce the risk of ischemic stroke in people who have had a stroke or a transient ischemic attack (TI
Because of its poor safety record, Ticlid is used rarely

You should not be treated with it if:

- You are actively bleeding, e.g. you have a peptic ulcer or bleeding in the brain

- You are bleeding actively
- You have severe liver damage
- You have very low blood cell count or severe anemia

Pregnancy/nursing

The safety of these medications during pregnancy and nursing is not known.

What are super aspirins (Glycoprotein IIb/IIIa inhibitors)?

Glycoprotein (GP) IIb/IIIa inhibitors are antiplatelet medications. Antiplatelets make the blood less sticky, which helps prevent blood clots from forming. These antiplatelets are the so-called “super aspirins” because they work in a similar way to aspirin, but have a much stronger effect.

Glycoprotein IIb/IIIa inhibitors are injected into the arm through an IV line. *Abciximab*

(pronounced ab-six-i-mab, ReoPro) is one example. They should not be confused with arthritis

drugs (COX inhibitors), which are sometimes called super-aspirins.

What are they used for?

These medications are mainly used in people undergoing angioplasty or stent placement.

Studies show that they reduce the chances of needing another angioplasty or having a heart attack.[37] The super aspirins work best in patients who are high-risk, including elderly patients or people with diabetes. [38, 39] There is no evidence that these antiplatelets reduce the chances of dying early. The evidence supporting the use of glycoprotein IIb/IIIa inhibitors comes from clinical trials, which include a carefully selected group of patients. Observational studies of “real world” patients suggest that the benefits may not be as great.

[40]

People with unstable angina or a mild heart attack may be treated with medications alone. Two

of the super aspirins, eptifibatide (Integrilin) and tirofiban (Aggrastat), have been approved for this type of medical management of unstable angina or a mild heart attack. Although studies showed that these drugs reduce the risk of a heart attack in most of these patients, the results of one study found that eptifibatide (Integrilin) was of little or no benefit in women.[41] Abciximab (ReoPro) is not used to treat unstable angina or mild heart attack by drugs alone because it was found to be of no benefit in these cases.

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Abciximab is used in patients with unstable angina or mild heart attack if they are likely to undergo angioplasty or stenting.

What are the risks of taking super aspirins?

As with any medication that thins the blood, super aspirins increase the risk of bleeding problems. Women treated with glycoprotein IIb/IIIa inhibitors tend to experience more bleeding complications than men.[43] [44] Abciximab (ReoPro) may also cause a dangerously low platelet count (thrombocytopenia), but this can be treated relatively easily. The other super aspirins, eptifibatide (Integrilin) and tirofiban (Aggrastat), are much less likely to cause this side effect.[45, 46]

In some patients treated with clot busters, the drugs don't work and patients have to undergo “rescue” angioplasty. Glycoprotein IIb/IIIa inhibitors should not be used during rescue angioplasty as they increase the risk of bleeding, especially in women and the elderly.[47]

Super-aspirin antiplatelets are injected into the arm through an IV line. Some clinical trials studied the use of oral glycoprotein IIb/IIIa inhibitors. Patients took pills at home after they had a heart attack or underwent angioplasty. Unfortunately, oral glycoprotein IIb/IIIa inhibitors were

found to be harmful. People who took the pills were more likely to have a heart attack or die than the people who did not take the pills.48 The oral glycoprotein IIb/IIIa inhibitors also caused severe bleeding problems. For these reasons, the pill version is no longer being studied.

Super Aspirins Quick Reference Table

Super Aspirins
(Glycoprotein IIb/IIIa inhibitors)
(check with manufacturer for specific information on each drug)

Generic:

Abciximab

Eptifibatide

Tirofiban

Brand:

ReoPro

Integrilin

Aggrastat

Given:

Injected into an IV line

Injected into an IV line

Injected into an IV line

Who should
get them:

In patients undergoing angioplasty/stenting
Patients with unstable angina who are likely to undergo angioplasty

In patients undergoing angioplasty/stenting	
Patients with unstable angina or a mild heart attack including those managed with drugs alone or those	

Patients with unstable angina or a mild heart attack including those managed with drugs alone or those	

You should not	

get them if:

- You are bleeding internally or have a history of bleeding problems
- You had a stroke within 30 days or have a history hemorrhagic stroke (bleeding in the brain)
- You had surgery or trauma within the previous 4 to 6 weeks
- You have very high blood pressure (more than 180 mm Hg, top number, and/or more than 110 mm Hg, bottom number)
- You have a brain tumor or aneurysm (a bulge in a blood vessel)

Pregnancy/
nursing

Safety unknown.

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