What is a haemangioma?
A haemangioma is a collection of small immature blood vessels. They are sometimes called ‘strawberry marks’ because the surface of some haemangiomas look a bit like a strawberry.
Haemangiomas can be superficial or deep in the skin. Some haemangiomas are a combination of the two, seen as a raised red area on the surface of the skin, and as a bluish swelling deeper in the skin. Very occasionally haemangiomas may occur internally.
Haemangiomas are not usually obvious at birth but become apparent within a few days or weeks. They grow rapidly in the first three months, increasing in size and sometimes in redness. It is unusual for haemangiomas to grow after six to ten months of age, when most haemangiomas tend to have a ‘rest period’ and then begin to shrink.

What is atenolol?
Since 2008 many children with haemangioma have been treated with a beta blocker called propranolol. This usually works quite well but occasionally it is not tolerated because of side effects. It is less selective in its effect than atenolol and may not be suitable for some children such as those with frequent wheeziness. Atenolol may therefore sometimes be suggested as an alternative.

Atenolol is a selective beta-blocker. Some nerves release a chemical called noradrenaline when they are stimulated, which in turn stimulates ‘beta adrenergic receptors’. These can cause a variety of effects. For instance, if the beta adrenergic receptors in the heart are stimulated, the heart pumps harder and faster than before, so more blood is pumped around the body. Beta-blocker medicines block the beta adrenergic receptors and stop them being stimulated.

How does atenolol help with haemangiomas?
By blocking the beta adrenergic receptors, atenolol can make blood vessels narrower, reducing the amount of blood flowing through them. This is particularly effective in haemangiomas, by reducing the colour and making them softer. Growth of the haemangioma cells is also limited by atenolol so that the haemangioma starts to reduce in size. More research is needed to fully understand how atenolol works. The beneficial effects are usually seen very quickly.
Does atenolol have side effects?
Atenolol may be associated with a number of side effects, which happen very rarely. However, you should report any of the following to your doctor as the dose of atenolol may need to be altered or, on very rare occasions, stopped. Theoretically, atenolol does not cross the blood-brain barrier and thus may have less effect on sleep disturbance. It may also have less effect on the lungs than propranolol.
- Bradycardia (slow heart rate)
- Hypotension (low blood pressure)
- Peripheral vasoconstriction (reduced blood flow to the extremities, such as fingers and toes, making them feel cold and blue)
- Weakness and fatigue, showing floppiness and disinterest in surroundings
- Hypoglycaemia (low blood sugar)
- Gastrointestinal disturbances such as constipation or diarrhoea
- Sleep disturbance
- Bronchospasm (temporary narrowing of the airway, leading to wheezing and coughing)

If you have any concerns about these side effects, please discuss them with your doctor, nurse or pharmacist.

What happens when my child starts treatment?
Some children will be monitored for two hours after the first dose. This monitoring allows the doctors to be absolutely sure your child can tolerate the prescribed dose. The procedure is occasionally repeated after one week when the dose is increased, although the dose is normally increased at home.

What dose should my child take?
Your child’s dose is worked out depending on their weight. This will mean that the dose may change over time as your child grows. At GOSH, we supply atenolol as a 25mg/5ml liquid - that is 5ml of liquid contains 25mg of the active ingredient.
In the UK, atenolol oral solution is available only in one strength: 25mg/5ml. However, parents are still asked to check the dose before giving it to their child.
- Atenolol is usually given once a day
- We advise giving your child frequent feeds during the day. Babies must also be woken during the night to have a milk feed.
- Your child should not have the anti-wheezeing medicine salbutamol (by inhaler or nebuliser) while taking atenolol as the two medicines have opposing effects.

How long does treatment last?
In our experience, treatment with atenolol until 14 to 18 months of age is usually sufficient to reduce the haemangioma so that it does not cause any problems. Ideally, the dose of atenolol should be reduced gradually rather than stopped suddenly.
What happens next?
Most haemangiomas will have disappeared completely by the age of five to seven years. Large haemangiomas may continue to get smaller until your child is about 10 years old. Depending on the size and location of the haemangioma, there may be little sign it ever existed. For more information about the possible effects of a haemangioma, please see our Haemangiomas booklet available from the Birthmark Unit, Pals Office or on our website.

Where to get further information
Birthmark Unit
Tel: 020 7405 9200 ext 1113
Support groups
The Birthmark Support Group offers support and advice to parents of children with all types of birthmark. Telephone their helpline on 0845 045 4700 or visit their website at www.birthmarksupportgroup.org.uk
Changing Faces is another organisation that will be able to offer help and support to anyone living with a condition that affects their appearance. Visit their website at www.changingfaces.org.uk or telephone their helpline on 0845 4500 275.