HAEMOPHILIA AND INHIBITORS
1: DIAGNOSIS AND TREATMENT

LEARNING OBJECTIVES
1. Understand the impact of inhibitors on the quality of life of people with haemophilia.
2. Be aware of the practical challenges involved in the management of patients with inhibitors undergoing surgery.

Consequences of haemophilia
People with severe haemophilia can experience spontaneous bleeding, usually into the joints. If left untreated, these bleeds cause severe pain and joint damage, leading to disability. Haemophilic bleeds can have a substantial impact on patients’ and caregivers’ quality of life. Patients often endure chronic pain that can result in lack of sleep, mood swings, and withdrawal from personal and professional support networks. As a result, bleeding episodes left untreated cause difficulties with education and employment, and mobility problems for those who have been disabled by regular bleeding into joints.

HAEMOPHILIA TREATMENT
Although there is currently no cure for haemophilia, modern treatment makes it possible to have a quality of life not previously considered possible. Treatment for haemophilia is usually by replacement of the missing clotting factor, that is, factor VIII for haemophilia A and factor IX for haemophilia B. In severe haemophilia, regular intravenous injections of clotting factor are required on a regular basis to help prevent bleeding. Regular treatment by prophylaxis minimises the likelihood of bleeds, and therefore long-term joint damage.

HAEMOPHILIA AND INHIBITORS
Unfortunately, some people develop an inhibitor (or antibody) against the clotting factor replacement therapy and, as a result, stop responding effectively to treatment. The usual role of antibodies in the body is to destroy substances that they do not recognise. In people with haemophilia, inhibitors may be created following treatment with replacement therapy because it is not recognised as a protein produced by the body. These then attach themselves to the factor replacement and inhibit its ability to stop bleeding.

A report by the UK Haemophilia Centre Doctors’ Organisation (UKHDOD, 2007) estimated there were around 6,000 males with haemophilia A in the UK in 2006. Approximately 2,300 of these were classed as having severe haemophilia A and around 1,300 had the moderate form. Evidence suggests that up to 1,200 people with severe or moderate haemophilia A may develop an inhibitor at some time in their lives (Haemophilia Society, 2008b). Inhibitor development is rarely seen among people with mild haemophilia.

The UKHDOD also estimated there were 1,200 people with haemophilia B in the UK in 2006, with 400 classed as having severe haemophilia B and 400 with the moderate form. Of those with severe or moderate forms, inhibitors seem to affect less than 5% (Haemophilia Society, 2008b).

Diagnosing inhibitors
Inhibitors may be suspected when bleeding does not stop as quickly as it should after a regular dose of clotting factor VIII replacement or clotting factor IX replacement. They may also be detected during routine screening of blood taken at regular check-ups. Their presence is usually confirmed using a blood test called the Bethesda inhibitor assay, and the amount of inhibitor in the blood is measured in Bethesda units (BU).

Patients with severe haemophilia who develop inhibitors may continue to have recurrent bleeding episodes resulting in disabling arthropathies. Evidence shows the burden of orthopaedic complications and the impact on quality of life are more
severe in haemophilia patients with an inhibitor than in those without an inhibitor (Morfini et al, 2007).

Treatment of inhibitors

Inhibitors can be classed as either high or low titre. A high titre inhibitor demonstrates a rapid response to factor VIII/factor IX with a level of >5BU, whereas a low titre shows a weaker, slower response with a maximum level <5BU (White et al, 2001). A low titre may mean patients can overcome the inhibitor’s effects successfully with higher doses of factor replacement therapy alone.

The optimum treatment for patients with a high titre antibody is to try to eradicate the inhibitor through immune tolerance induction (ITI). The aim of ITI is to train the body to accept treatment with the clotting factor replacement therapy alone.

Regular high doses are administered over a period of time, sometimes together with immunosuppressive drugs to help eradicate the production of inhibitors. However, this is not always successful, and in some groups of patients it is not an appropriate course of action.

In these groups of patients bleeding has to be controlled by other means such as bypassing agents like factor VIII inhibitor bypassing fraction or recombinant factor VIII.

Factor VIII inhibitor bypassing fraction contains other activated clotting factors that can stimulate the formation of a clot and stop bleeding. In this way it bypasses the need for specific clotting factor replacement therapy. In addition, it is broken down slowly by the body, meaning that a convenient dosing schedule can be used.

Recombinant factor VIIIa is a synthetically produced clotting factor. It is effective in the treatment of both minor and life-threatening bleeds, and in preventing surgical bleeding. However, it has a very short half-life and the initial dose needs to be repeated 2–3 hourly until clinical improvement. The duration and frequency will depend on the severity of the bleeding episode (Novo Nordisk, 2008).

SURGERY WITH INHIBITORS

Surgery used to be strongly contraindicated once patients had developed inhibitors. But the availability of bypassing therapies means surgery to help improve quality of life is now possible.

However, compared with patients without inhibitors, the risks of surgery are higher as it is more difficult to achieve satisfactory clotting with bypassing agents than with clotting factor replacement therapy in non-inhibitor patients.

There are also cost issues. As a result, patients and the multidisciplinary team face unique challenges to ensure operative success and positive long-term outcomes.

Many authors have identified the difficulties of managing haemophilia patients with inhibitors during surgery and post-operatively (Goddard, 2005; Ludlam, 2005), although to date few have discussed the nursing role. Here we discuss some of the nursing challenges in managing patients undergoing surgery.

Challenges

Communication is critical to effective treatment and outcomes (Leonard et al., 2004). Communication between the multidisciplinary team, patients and caregivers, and at all levels of the team, needs to be open and fully informed.

Ready agreement is needed from the patient, as well as enthusiastic support from all members of the multidisciplinary team.

In addition, good coordination and involvement between team members and the allied departments will also be necessary. Encouraging this support and communication from all colleagues, patients and caregivers from the beginning may be the key to success.

Effective management of haemophilia patients undergoing surgery requires a comprehensive care programme. An organised team approach is critical to successful surgery. Preoperative arrangements must be decided and a clear and detailed protocol devised well in advance.

From a nursing perspective, this may also include resource planning for the day, preparation for baseline assessments of inhibitor levels, performing a trial run of the monitoring process and organising a preoperative pain assessment.

The full reference list for this unit is available in Portfolio Pages at nursingtimes.net

KEY REFERENCES