in-stent restenosis compared with bare metal stents (Ghupta et al, 2010). To reduce the likelihood of in-stent restenosis, SIGN (2007) advocates the use of dual anti-platelet therapy of aspirin and clopidogrel.

For drug eluting stents, clopidogrel should be prescribed for one year. There is ongoing discussion regarding the time frame for its use following bare metal stent implantation.

**COMPLICATIONS**

Following PPCI, patients are transferred to the coronary care unit for observation and monitoring for signs of complications.

Keeley et al (2003) suggest that the risk of complications following emergency PPCI is greater than after an elective procedure as patients are likely to be haemodynamically unstable and the procedure itself takes longer.

Thompson and Webster (2004) suggest complications associated with PPCI following acute myocardial infarction depend on the overall loss of functional myocardium as a result of ischaemia, the degree of coronary artery disease and other pathology, such as diabetes and renal disease.

Major complications following this intervention include death, stroke and cardiac tamponade (accumulation of fluid in the pericardium).

The patient needs to be carefully monitored; observations are listed in Box 2.

**Arrhythmias**

Approximately 90% of coronary patients will experience some form of arrhythmia, particularly in the first 24 hours after a STEMI (Swanton and Banerjee, 2008).

It is imperative that the nurse is able to identify rhythm disturbances so that prompt treatment is given. Common cardiac arrhythmias include: ventricular tachycardia; ventricular fibrillation; heart block; atrial fibrillation; and bradycardia.

**Puncture site**

The arterial puncture site should be assessed every 30 minutes for up to four hours (depending on hospital protocol). Heparin is administered during the procedure to prevent thrombus formation on catheters and guide wires, and increases the risk of bleeding.

Sometimes the patient returns to the coronary care unit with the sheath introducer still in place and this increases the risk of bleeding and haematoma formation.

The introducer is placed inside the patient’s arteries to help with the insertion and placement of the guiding catheter. The aim is to remove the sheath introducer as soon as possible once the anticoagulant effects of heparin have diminished (Ramrakha and Hill, 2008).

In addition to observing the site, the distal limb pulses in the limb where the surgical site is should be palpated before and after sheath removal to assess for any circulatory dysfunction in the limb. The colour, warmth, movement and sensation of the limb should also be assessed.

**Monitoring vital signs**

Close monitoring of vital signs is important, particularly after sheath removal, as approximately 15% of patients experience a vasovagal reaction (Ramrakha and Hill, 2008).

This fall in heart rate and blood pressure compromises the coronary perfusion pressure, which could subsequently impair the efficacy of the PPCI, and the patient may experience recurrent angina symptoms.

**Pain**

Patients’ level of pain should be assessed following PPCI as they may experience post procedure chest pain; this should be measured using a validated pain assessment tool.

Campbell and Torrance (2005) highlight that chest pain following PPCI can occur in up to 40% of patients, and may be caused by in-stent restenosis, new disease, or simply vasospasm or stretching of the coronary arteries.

In-stent restenosis occurs when the treated vessel becomes blocked again, and the nurse should be aware of this possible