Changing patients’ position in bed after non-emergency coronary angiography reduced back pain


In patients who have had non-emergency coronary angiography (CATH), does changing their position in bed reduce back pain without increasing the incidence of bleeding from the catheter insertion site?

**METHODS**

**Design:** randomised controlled trial.

**Allocation:** unclear.

**Blinding:** unblinded.

**Follow up period:** ≤24 hours.

**Setting:** 2 public hospitals in Hong Kong, China.

**Patients:** 420 patients who had received non-emergency CATH. Exclusion criteria included non-Chinese patients, non-femoral approach for the procedure, known bleeding disorders, development of bleeding at the catheter insertion site before sheath removal, presence of back pain before procedure, systolic blood pressure >190 mm Hg or diastolic blood pressure >110 mm Hg, age <18 years, and complications during the procedure. 419 patients (mean age 62 y, 67% men) completed follow up.

**Interventions:** positioning intervention (n = 207) or usual care (n = 213). Patients in the intervention group had their position in bed changed hourly varying between supine, right side lying and left side lying during the first 7 hours. During side lying, a pillow was placed at the lumber area for support and the affected leg remained straight. Patients were also instructed to place 3 fingers over the femoral dressing to apply pressure while turning. Usual care comprised bed rest for 8–24 hours, with the affected leg immobilised during bed rest.

**Outcomes:** back pain intensity (Numeric Pain Intensity Scale; 0 = none, 10 = severe pain) measured immediately after the procedure, at 2, 4 and 6 hours after CATH, and the next morning at 8.00 AM; and incidence of significant bleeding (blood loss >100 ml that would penetrate the standard pressure dressing >100 ml that would penetrate the standard pressure dressing, blood loss >100 ml that would penetrate the standard pressure dressing, or haematoma >5 cm) from the catheter insertion site. Femoral puncture sites were examined every 15 minutes for the first hour, then hourly for the next 6 hours, and at 8.00 AM the morning after the procedure.

**Patient follow up:** 99.8%.

**MAIN RESULTS**

During the first 6 hours, increase in back pain intensity was lower in the intervention group than in the usual care group (p < 0.001), with the intervention group reporting lower levels of back pain at all the 5 pain assessment times. The groups did not differ for incidence of significant bleeding (1 vs 4 patients, p = 0.37).

**CONCLUSION**

In patients who have had non-emergency coronary angiography, changing their position in bed reduced back pain without increasing the incidence of bleeding from the catheter insertion site.

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**Commentary**

Conventional care after CATH involving the femoral artery site routinely includes manual or mechanical site compression, keeping the affected extremity straight, and bed rest for 6–24 hours, to prevent bleeding from the insertion site. This care, guided largely by physician discretion or hospital standards, has not been based on empirical studies.

Back discomfort associated with restricted movement and prolonged immobilisation after CATH is a common patient complaint. The optimal length of time for bed rest is unknown, and until recently, little was known about the effect of positional change on outcomes. However, Chair et al have extended the findings of a previous study, which found that side lying was as safe as the supine position and more comfortable for patients. This result is also consistent with research that shows that elevating the head of the bed by 15–45° after CATH reduced back pain and promoted wellbeing without an increase in vascular complications.

The combined findings of studies on the effect of positional change will enable nurses to increase patient comfort safely. Altering a patient’s position by 15–45° head elevation and side to side positioning will enhance patient comfort, reduce back pain, and enable them to meet self-care needs such as eating, drinking, and voiding. However, early ambulation may be the best strategy to offset back discomfort after CATH. Studies have shown that earlier ambulation (2–4 vs 5–6 h after CATH) resulted in greater patient satisfaction with care and no difference in incidence of bleeding complications.

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