

## Position Change followed by Early Ambulation after Coronary Angiography via Femoral Approach: A Randomized Controlled Trial

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Sir,

Coronary angiography is the gold standard test for detecting coronary artery disease. Femoral route is usually preferred but due to risk of vascular complications, bed rest is recommended. The aim of present study was to assess effect of position change followed by early ambulation after coronary angiography via femoral approach on comfort, fatigue and vascular complications of the patients.

A randomized controlled trial was conducted on 80 adult conscious patients (40 each in control and experimental group) undergoing coronary angiography in a tertiary care medical and research institution in North India. Ethical approval was obtained from the Institute Ethics Committee and CTRI registration was done under Indian Council of Medical Research. After taking informed written consent, the patients were randomly allocated to experimental and control group using computer generated random table. Patients in control group were placed in supine position and ambulated after 6 hours. Patients in experimental group were kept

in supine position for 2 hours after angiography, followed by right lateral position (1 hour), supine position (1 hour) and ambulated after 4 hours. Comfort (Kolcaba's General Comfort Questionnaire), back pain (Numerical rating scale) & fatigue (Fatigue Visual Numeric Scale) were assessed at 2, 4, 6 & 24 hours after angiography. Incidence of vascular complications was documented at 24<sup>th</sup> hour.

Demographical and clinical profile of patients in both the group were comparable. More than three-fourth of the patients in the control group and more than half of the patients in the experimental group were diagnosed with coronary artery disease. It was observed that back pain was significantly lower in experimental group as compared to the control group at 6<sup>th</sup> hour and 24<sup>th</sup> hour after angiography. At 4<sup>th</sup> and 6<sup>th</sup> hour after angiography, fatigue experienced by experimental group was significantly lower than control group. There was no significant difference between the two groups in vascular complications.

Results of the present study showed that position change followed by early ambulation at four hours after coronary angiography reduced back pain, enhanced comfort and decreased fatigue, without increasing the risk of the vascular complications.

To avoid vascular complications, patients are usually instructed to rest in bed in a supine position with the affected leg in a straight position for 6-8 hours after coronary angiography. Due to this enforced supine bed rest, immobilization and restricted positioning, patients frequently experience back pain discomfort and fatigue. Lying on the back for a long time imposes pressure, and causes

cellular ischemia, muscle spasm, fatigue and pain in the lumbar muscles. Inner-muscle pressure in lumbar muscles has a direct relation with the patients' position and the imposed load on the muscles.<sup>1-3</sup> Therefore, patients intend to change their position so as to reduce the pain and discomfort. Moreover early ambulation allows the patient to sit comfortably and eat without difficulty. Leg numbness and urinary discomfort are also decreased<sup>1</sup>.

Similar to present study findings, it is reported in the literature that ambulating patients four hours after coronary angiography via the femoral route is safe and do not increase the vascular complications<sup>1-3</sup> While few studies have focused on only the effect of early ambulation after coronary angiography on back pain, comfort and vascular complications,<sup>2,3</sup> others have only demonstrated the effect of various modified positions of the patients after coronary angiography via femoral route. Present study has combined the effect of modified positioning with early ambulation.

In the light of the findings of the present study, it can be suggested that the position of the patients can be safely changed followed by an early ambulation of four hours after coronary angiography via the femoral route.

## References

1. Abdollahi AA, Mehranfard S, Behnampour N, Kordnejad AM. Effect of positioning and early ambulation on coronary angiography complications: a randomized clinical trial. *Journal of Caring Sciences* 2015; 4:125.
2. Mohammady M, Heidari K, Sari AA, Zolfaghari M, Janani L. Early ambulation after diagnostic transfemoral catheterisation: a systematic review and meta-analysis. *International Journal of Nursing Studies* 2014; 51:39-50.
3. Chair SY. Early mobilisation after transfemoral catheterisation is not associated with increased vascular incidents, and reduces back pain. *Evidence Based Nursing* 2014; 18:20.