Core Stability Exercises Program	
Supine position The exercises intensity increased by flexing the patient's elbows.	
1. Pelvis anteversion-retroversion: The hips and knees at 90° flexion and the patient's feet and hands resting on the plinth. Selective pelvis anteversion-retroversion. The physiotherapist helping the patient may be placed in front of her/his or on the affected side and keep the patient's leg.	
2. Upper trunk rotation: The patient resting his/her trunk on the plinth with knees flexed at 90° and the feet flat on the support surface. His/her arms are flexed on the ribcage. The physiotherapist steadied the patient's pelvis and patient rotates affected side to unaffected side and *vice versa*. When patient do correctly this exercise, the physiotherapy apply a slow resistance on patient's shoulder.	
3. Single bridging: Starting position is the same that exercise 1. The patient lifts the pelvis of the plinth maintaining a neutral lumbar and pelvic alignment. When patient does this exercise easily an elastic band is put on your iliac crests to increase difficulty.	
4. Lateral movement: Starting position is the same that exercise 1. Patient lift the pelvis of the plinth and moves to the right and left side. The physiotherapist steadied the patient's knees and feet if it is necessary and her/his hand is under patient's sacrum to help her/him.	
5. Pre-unilateral bridging (a): Starting position is the same that exercise 1. Unaffected patient's leg is forward 20 centimetres of affected foot and she/he lifts the pelvis. **(b):** Unaffected patient's leg is resting on the physioball and patient lifts the pelvis with his/her affected leg at 90° knee and hip flexion.	 
6. Unilateral bridging: Starting position is the same that exercise 1. Lifting the unaffected leg off the plinth, with the patient maintaining the pelvic bridge position, the physiotherapist steadying the affected leg.	
7. Unilateral bridging physioball: The patient's leg rest on a physioball and she/her lifts the pelvis and the unaffected leg. The physiotherapist steadying the affected leg if it is necessary.	
8. Lower trunk rotation: The patient's leg rest on a physioball at 90° flexion knees and hips. The patient rotates lower trunk. The physiotherapist steadied the patient's chest and supported the affected leg.	
9. Lower trunk flexion: The same position that exercise 8, but legs patient bend on her/his chest.	

Figure 1. *Cont.*

Stable Sitting Position. The feet rest on the ground, 90° bend knees and hips flexion	
10. Trunk flexion-extension: The physiotherapist moves the patient's chest to flexion-extension of the lower part of the trunk (involving selective pelvis anteversion-retroversion).	
11. Upper trunk rotation: Starting position is the same that exercise 10. The patient rotates the upper trunk, she/he moves each shoulder forwards and backwards with crossed arms on the ribcage, the physiotherapist steadying the patient's pelvis.	
12. Trunk inclination: Starting position is the same that exercise 10. The patient touches with her/his unaffected elbow the plinth, if patient could not do this a pillow is put on the plinth and she/he touches the pillow. Secondly the patient touches the plinth with affected elbow.	
13. Lift hemipelvis: Starting position is the same that exercise 10. The patient lifts her/his affected hemipelyis and secondly she/he lifts unaffected hemipelyis.	
14. Lower trunk rotation: Starting position is the same that exercise 10. The patient moves his/her unaffected knee forwards and backwards, with the physiotherapist helping the patient with his/her hand on iliac bone. Secondly patient moves affected leg.	
15. Forward reach in three directions with unaffected shoulder: Starting position is the same that exercise 11. Forwards (90° flexion), ipsilateral (90° abduction) towards the unaffected side and (90° horizontal adduction) across the body towards the affected side.	
16. Forward reach in three directions with affected upper limb: The physiotherapist put the affected patient's arm on a physioball in front of her/him. The patient moves her/his arm and trunk forward. Secondly, the same exercise but the patient moves to ipsilateral with a physioball.	

Figure 1. *Cont.*

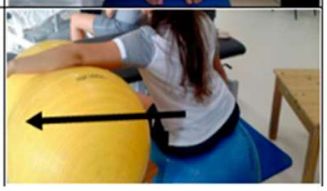
Unstable Sitting Position. The feet rest on the ground, 90° bend knees and hips flexion. It is allowed separate the knees.	
17. Pelvis anteversion-retroversion: The patient is sitting on a physioball and he/she is allowed to separate his legs The physiotherapist moves the patient's chest to flexion-extension of the lower part of the trunk (involving selective pelvis anteversion-retroversion) (as in the photography).	
18: Upper trunk rotation: Starting position is the same that exercise 18. The patient rotates the upper trunk, she/he moves each shoulder forwards and backwards with crossed arms on the ribcage, the physiotherapist steadying the patient's pelvis.	
19: Trunk inclination: Starting position is the same that exercise 17. The patient inclinates her/his trunk to physioball, is not necessary to touch it. First with unnafected side and secondly with the affected side.	
20: Lift hemipelvis: Starting position is the same that exercise 17. The patient lifts her/his affected hemipelvis and secondly she/he lifts unaffected hemipelvis. It is allowed to lift affected feet.	
21: Lower trunk rotation: Starting position is the same that exercise 17. The patient moves his/her unaffected knee forwards and backwards, with the physiotherapist helping the patient with his/her hand on iliac bone. Secondly patient moves affected leg.	
22: Forward reach in three directions with unaffected shoulder: Starting position is the same that exercise 17. Forwards (90° flexion), ipsilateral (90° abduction) towards the unaffected side and (90° horizontal adduction) across the body towards the affected side.	
23: Forward reach in two directions with affected upper limb: The physiotherapist put the affected patient's arm on a physioball in front of her/him. The patient moves her/his arm and trunk forward. Secondly, the same exercise but the patient moves to ipsilateral side with a physioball.	

Figure 1. Core stability exercises intervention.

2.6. Participant Timeline

The study has five assessments: T0 (baseline), T1 (week three, only primary outcomes), T2 (week five, end-point, 25 sessions), T3 (week 17) and T4 (week 29). Study duration per patient: 29 weeks (See Figure 2).