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The CASINO Trial: Surgical versus conservative management in patients with cervical radiculopathy due to intervertebral Disc Herniation: A Prospective Cohort Study

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Background: Cervical Radicular Syndrome (CRS) is predominantly treated conservatively, but surgical treatment can be an option after shared decision making. Knowledge on the difference in outcome is scarce.

Research Question: Is there a difference in Visual Analogue Scale for arm pain (VAS arm) 3 months, 1 year and 2 years between conservatively and surgically treated patients suffering from cervical radiculopathy due to a herniated disc?

Design: A multi-centre observational cohort study was conducted in patients visiting the neurosurgeon with CRS and disc-herniation.

Methods: Conservative and surgical treatment were discussed and in agreement a decision was made. VAS arm pain and Neck Disability Index (NDI) served as primary outcome parameters. Secondary outcome measures involved VAS neck pain and the EuroQol VAS (EQ-VAS). Data were collected at baseline, 6, 12, 26, 38, 52 and 104 weeks after inclusion, and analysed using linear mixed-effects models, while adjusting for age, gender, smoking behaviour, BMI and Type D Scale-14 (DS-14).

Results: 141 patients were included, 88 were treated surgically and 53 were conservatively treated. At baseline, patients in the surgical group had more arm pain (VAS Arm Pain, $p=0.017$) but other baseline parameters were comparable. However, during the two year follow up period the surgical arm fared better than the conservatively treated patients: VAS arm pain decreased 12 mm more in the surgical group than in the conservative group ($p=0.053$). VAS neck pain decreased 19 mm more in the surgical group than in the conservative group ($p=0.002$).

Discussion: During two years follow up, differences could be substantiated between the two treatment arms regarding arm and neck pain. The current results illustrate that treatment choices made in shared decision making lead to a more satisfactory decline in symptoms in the

surgical treatment arm. In particular the decrease in neck pain needs to be discussed in shared decision making dialogues.

Fig. 1

