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## Objective

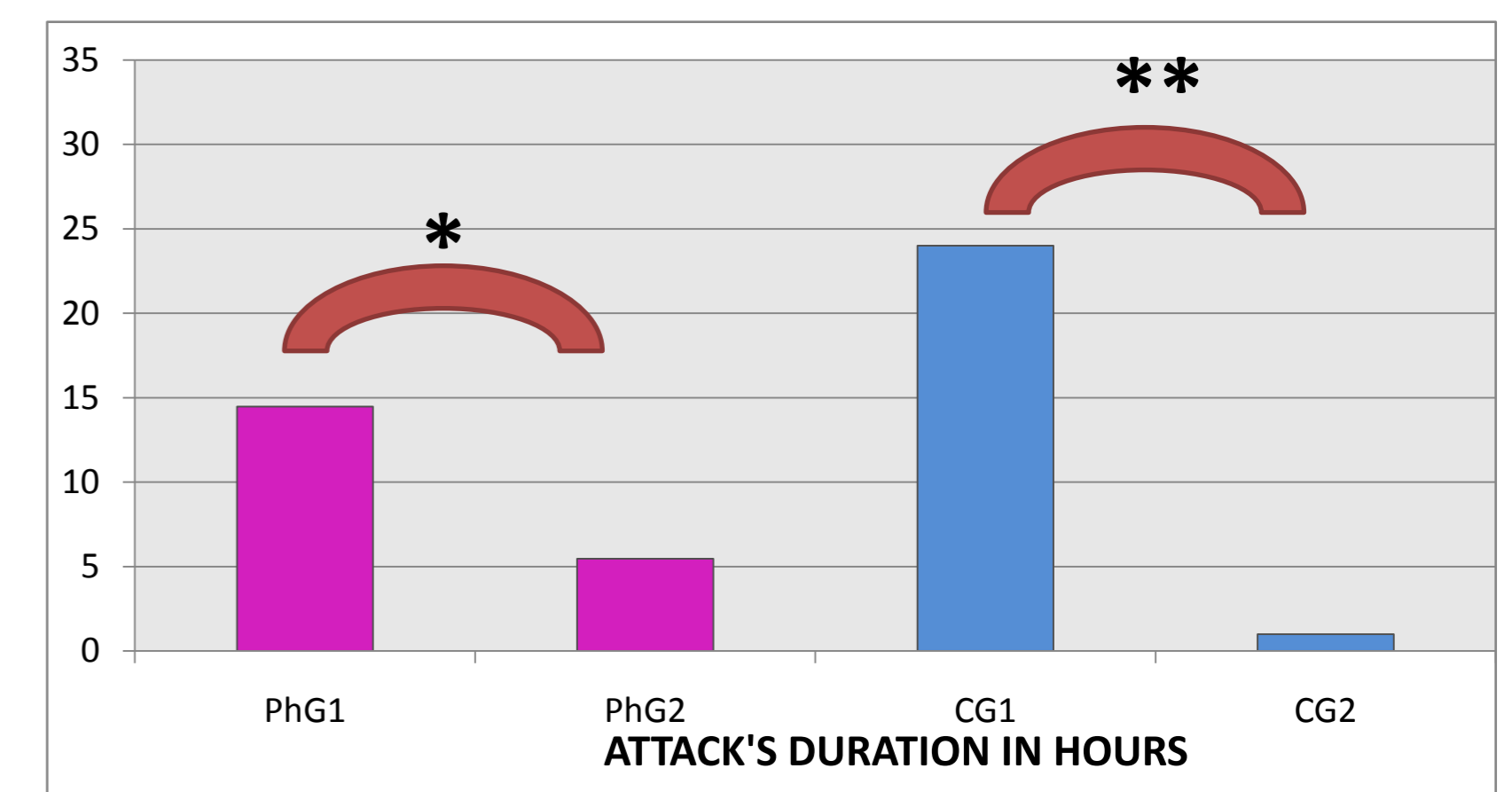
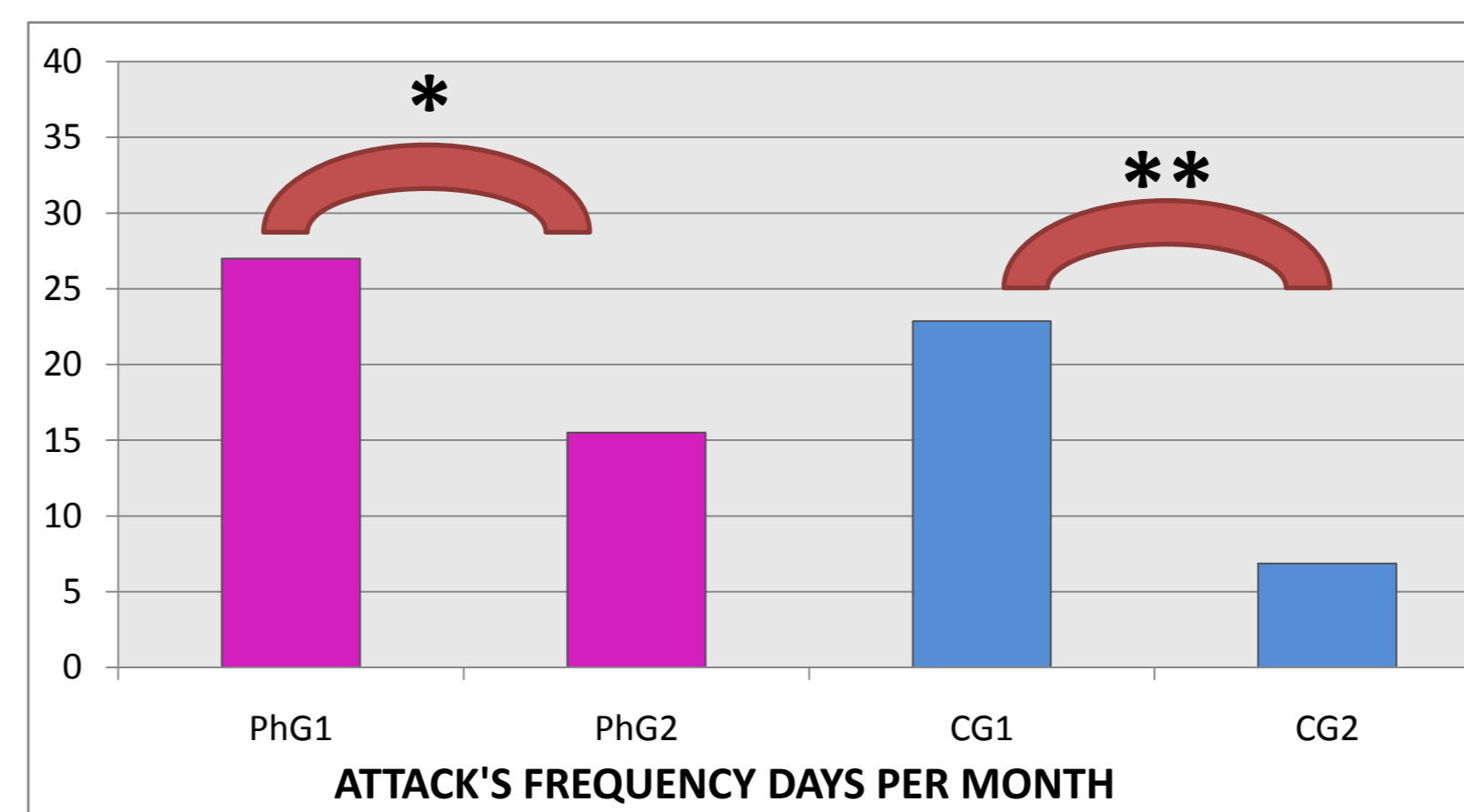
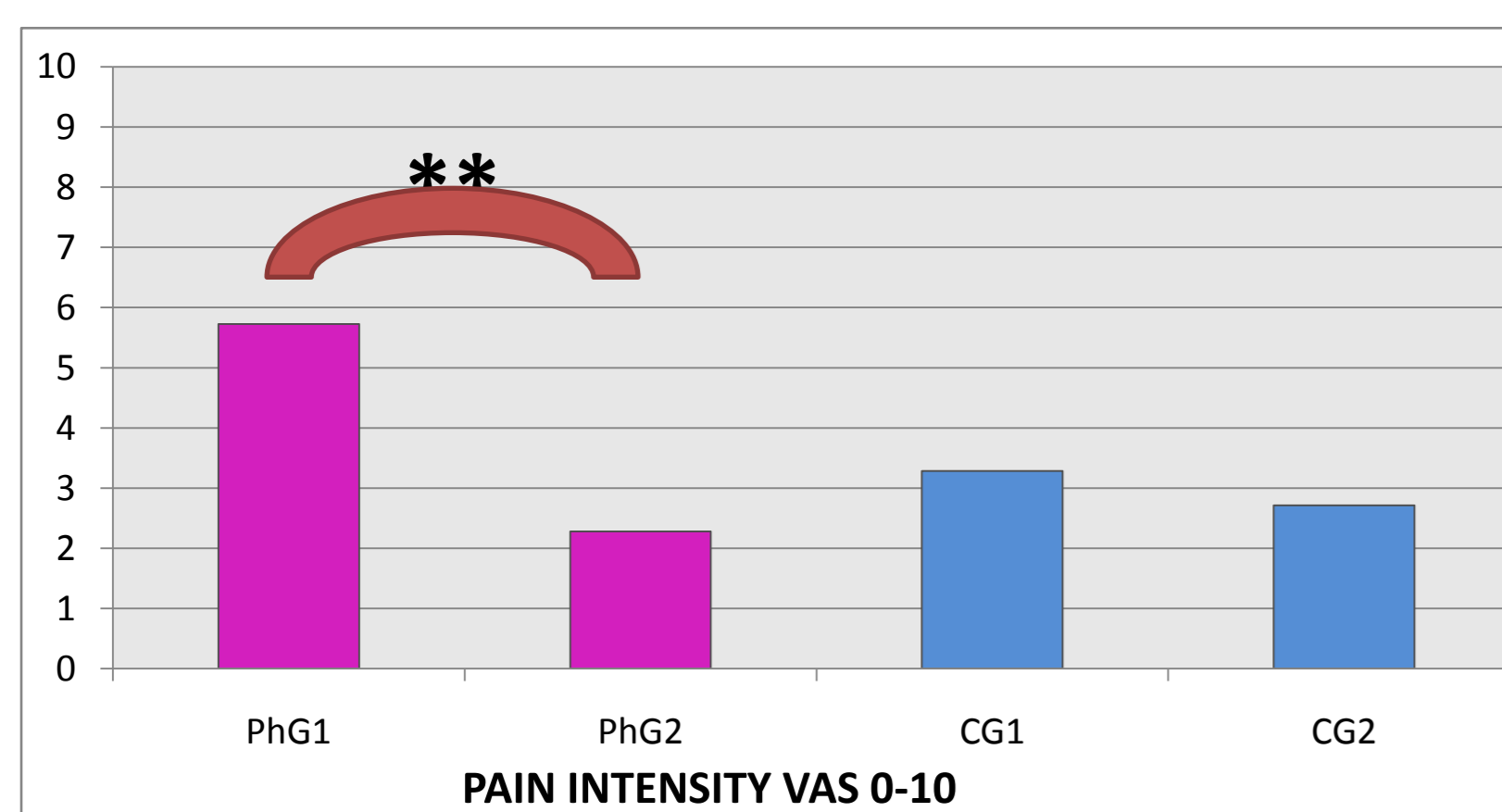
To verify the efficacy of an individualized physiotherapeutic treatment based on a protocol assessment of Cervical Spine disorders in patients with chronic Tension Type Headache (cTTH).

## Materials and methods

Patients attending the Headache Centre of Trieste suffering with cTTH (ICHD3 beta criteria) and preferring not to take pharmacologic treatment were enrolled. Patients were not taking prophylaxis in the last 3 months. A three-month baseline period was registered with an ad hoc diary. The physiotherapy group (PhG) underwent a three-month combined protocol of postural advice, exercises and manual therapy. Intensity evaluated with a Number Rating Scale (NRS), frequency and duration of pain were analysed with GraphPad InStat 3.06. The evaluation of the cervical range of motion (CROM) was carried out with an headgear provided with goniometer and spirit level. The Neck Pain and Disability Scale I (NPDS-I) Questionnaire was utilized to assess Neck Pain if present. Data were compared with a control group (CG) treated with amitriptyline for three months.

## Results

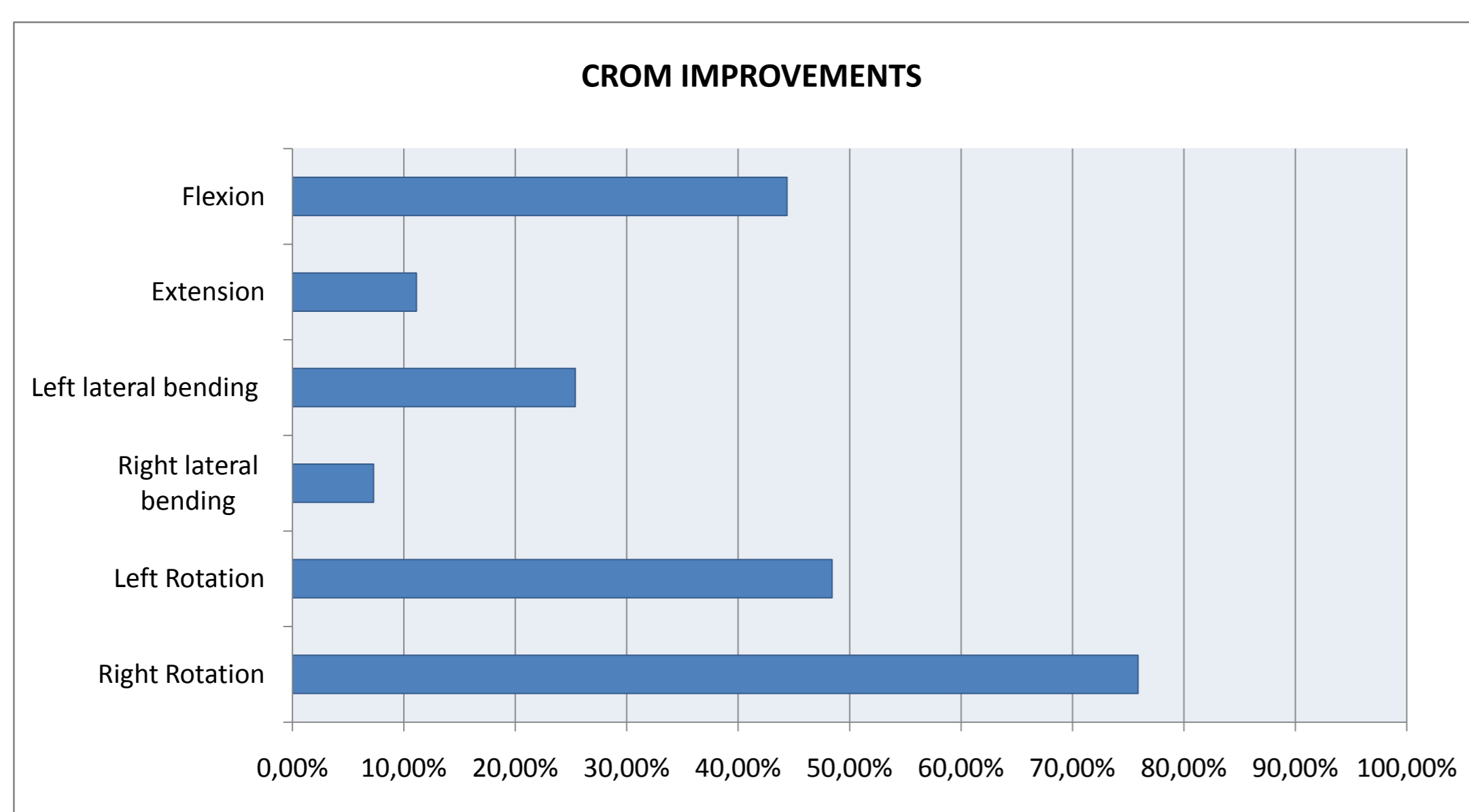
Eight PhG (5M and 3F, mean age 58±16) and Eight CG (4M and 4F, mean age 49±21) patients were enrolled. Six of the 8 PhG patients improved, 2 of them abolished headache, none worsened. All headache patterns statistically improved, in particular pain intensity reduced from NRS 5,7±1,6 to 2,2±2 (p=0.007), frequency reduced from 26±5 to 15±13 days per month (p=0.03), and duration of attacks improved from 14±7 to 5±7 hours (p=0.01).



- **PhG 1 - 2: Physiotherapy Group assessment before and after the treatment**
- **CG 1 - 2: Pharmacological Prophylaxis Group assessment before and after the treatment**

\* p < 0,05  
\*\* p < 0,01

The patients who abolished headache had most significant clinical improvement in the NPDS-I Questionnaire, while the 2 patients without improvement had null score. The NPDS score improved statistically after the treatment (p= 0.03). Most CROM improvement were Flexion 44% and Rotations (right: 75%; left: 48%). The CG significantly improved in duration (from 24 to 1 hour per crisis [p=0,0001]) and in frequency (from 23±3 to 7±6 days per month [p=0,0005]), but not in intensity (from NRS 3,25±0,7 to 2,5±0,9 [p=NS]).



Deep Neck Flexors evaluated by an endurance test and overall strenght of the cervical spine evaluated according to the Kendall scale didn't seem to be related with an improvement of the headache symptoms despite that 7 of the 8 PhG reported an endurance test below standard and all patients showed at least one direction assessed as weak. Perhaps a greater numerosity of patients is required to explain such findings.

## Conclusion

Our data suggest that an individualized physiotherapeutic treatment is efficient in improving headache patterns, cervical motion and disability in cTTH. Individualized physiotherapy represent an effective alternative option in treating patients with cTTH who prefer not to take prophylactic drugs.