Background: What is Hypopressive Exercise?

Slow diaphragmatic inspiration, total expiration, followed by diaphragmatic aspiration (a movement that brings the abdominal wall to the lumbar spine, which leads to a superior displacement of the respiratory diaphragm cupola) Caufriez theorizes this decreases intra-abdominal pressure and causes a reflex activation TrA and PFM leading to the belief this is an indication to use these exercises in patients with POP

Methods:
• The main investigator was blinded to group allocation and the (originally) sixty-three women with Stage II POP were divided into 3 randomized groups:
  1. Pelvic Floor Muscle Training [PFMT] group (n=21)
  2. Hypopressive Exercise + Pelvic Floor Muscle Training [HE+PFMT] group (n=21)
  3. Control group (n=16): 5 dropped out of this group due to motivational problems
• Table I shows that the 3 groups had no significant differences regarding demographics of age, BMI, parity, gravidae, or hormonal status
• All subjects were evaluated by the PT responsible for the study; standardized history and PFM assessment with function of the PFM measured by vaginal palpation
• Maximal voluntary contraction (MVC) was measured using 0-5 Modified Oxford grading system with verbal cue of “lift and squeeze your PFM as hard as possible”. MVC was also measured with sEMG via vaginal probe.

PFMT protocol:
• Received 3 sessions to learn how to:
  1. Isolate/localize PFM and TrA
  2. Increase awareness of PFM with quick removal of vaginal cone and with stretching reflex during voluntary contraction
  3. Perform HEP as described below
• 3 sets of 8-12 MVCs x 6” followed by 3 fast contractions in a row with 12” rest – 1 set in each position: lying, sitting, standing
• Performed daily HEP over 12 weeks with phone calls every 2 weeks by PT, monthly follow-ups, and use of daily exercise diary

HE + PFMT protocol:
• Received 3 sessions to learn how to:
1. Isolate/localize PFM and TrA
2. Perform HE 3 without PFM
3. Perform HE with PFM and provide HEP as described below
   - 2 sets of 8-10 reps, 1 lying and 1 standing – 6-8 second hold
   - Performed daily HEP over 12 weeks with phone calls every 2 weeks by PT, monthly follow-ups, and use of daily exercise diary

**Control protocol:**
- One appointment to receive lifestyle advice regarding healthy weight, constipation, coughing and the avoidance of heavy lifting with instructions on how to perform PFM contractions without defined protocol.
- No contact with gynecologist or PT until 12-week follow-up

**Outcomes:**
- Table II shows that baseline comparison of MVC and endurance between groups was homogeneous. HE + PFMT and PFMT groups both significantly improved \((p \leq 0.001)\) in categories of MVC and endurance via vaginal palpation and MVC via sEMG.
- With more reps and sets performed in the PFMT group, endurance likely improved more significantly for these subjects compared to subjects in the HE + PFMT group.

**Discussion:**
- Can these two experimental groups truly be compared? Interventions are not matched; therefore more than one variable is being altered. The researchers should have only added HE to the same PFMT protocol.
- Control group was also given intervention of internal vaginal exam which was a form of neuromuscular re-education for these women with underlying PFM dysfunction indicated by POP and average MVC of 2/5 on Modified Oxford between all groups at baseline.
- Clinically, the diaphragm is frequently used to assist in PFM excursion. This article does not prove that aspiration of the diaphragm will improve MVC. HE differs significantly from the traditional goal of PFM isolation.
- POP-Q was not re-administered to assess possible changes in staging of prolapse. This would have been an interesting comparison.
- An additional study performed by this same group drew conclusions that cross-sectional area of the levator ani muscle group, measured via transperineal ultrasonography, was significantly improved in both intervention groups compared to control.