“I got water up my nose.” From swimming accident to rhinosinusitis cure?

Clinical Question: Is nasal saline irrigation (NSI) helpful for rhinosinusitis?

Bottom-line: Nasal saline irrigation does not improve acute rhinosinusitis (example “colds”). It can improve allergic and chronic rhinosinusitis, improving symptoms ~30% and improving quality of life with rhinosinusitis at least 10% for one in two patients. Isotonic is as good as hypertonic and rinses are better than sprays (but with more adverse events).

Evidence:
- We identified nine systematic reviews of NSI. Differences noted are statistically significant.
  - Acute rhinosinusitis:
    - Acute upper respiratory tract infection: Two systematic reviews\(^1,2\) (five Randomized Controlled Trials (RCTs), 749 patients, 27% adult).
      - Days to wellness or antibiotic use: No difference.\(^1\)
      - One trial showed a potentially clinically non-meaningful ~0.3 on 4-point scale improvements in nasal symptoms.\(^1\)
    - Acute sinusitis in children: One systematic review but no RCTs.\(^3\)
  - Allergic rhinosinusitis: One systematic review (nine RCTs, 295 patients, ~71% adult).\(^4\) Relative improvement of NSI versus no treatment.
    - Mean total symptom score 32.5% better.
  - Chronic rhinosinusitis: Six systematic reviews (1-8 RCTs, 127-389 patients).\(^4-9\)
    - Symptom score, NSI versus nothing: Standard Mean Difference 1.42 but clinical meaning is uncertain.\(^5\) Longest RCT at six months found:
      - NSI improved symptom score from 4 to 2.4 versus no change without treatment.\(^10\)
      - Attaining a 10% improvement in nasal symptoms quality of life, Number Needed to Treat (NNT)=2.\(^10\)
    - Rinse versus spray:\(^6\) Rinse reduces symptoms more than spray, NNT=5.
      - Compliance at eight weeks worse with rinse: 79% versus 93% spray (Number Needed to Harm (NNH)=8).
Any adverse event: 43% rinse and 25% spray (NNH=6).
  - Most common: Persistent nasal drainage.

- Isotonic versus hypertonic: Similar clinical endpoints.5,8,11
- Adverse events: Poorly reported; Nasal burning, ear plugging, and nausea most frequent.7

Context:
- Systematic review quality varied from good1,5 to poor.2,8 Deficiencies include: No quality assessment,2,4,7-9 poor methods description,2,8 inadequate description of studies,2,4,6-8 large heterogeneity,2,4,5 and poor adverse event reporting.1-5,8,9 RCT quality frequently poor with inconsistent outcomes.
- Guidelines recommend NSI:
  - As an option in chronic rhinosinusitis.12,13
  - No recommendation14 or second-line option in allergic rhinitis.15

Authors:
Emma Huang BScPharm, G Michael Allan MD CCFP

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References:

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