

Corticosteroids for Eosinophilic esophagitis in children: A Meta-analysis

Munoz-Osores E et al. Pediatrics. 2020 Nov;146(5):e20200874

Background & Methods:

- Meta-analysis of all Randomized controlled trials in children
- Five studies with 206 patients included
- Diagnosis of Eosinophilic esophagitis (EoE): > 15 Eosinophils/HPF in esophageal biopsy specimen
- Heterogeneity in use of proton pump inhibitors and exclusion diet
- Intervention: Topical Fluticasone(n=2), oral viscous budesonide(n=3)
- Duration: 3 months

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet

**Steroids for eosinophilic esophagitis in children**

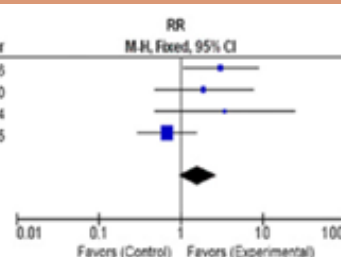
Corticosteroids for Eosinophilic Esophagitis in Children: A Meta-analysis.

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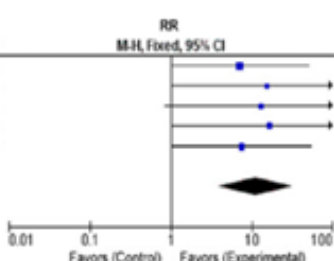
Symptomatic response

Steroids: 33.6%,
Control: 21.8%
RR: 1.62 (CI: 0.94-2.79)
p value: 0.08

| Study or Subgroup | Experimental Events | Experimental Total | Control Events | Control Total | Weight | RR, M-H, Fixed, 95% CI | Year |
|--|---------------------|--------------------|----------------|---------------|---------------|-------------------------|------|
| Konikoff et al, 2006 | 13 | 21 | 3 | 15 | 21.4% | 3.10 (1.07-8.99) | 2006 |
| Dohil et al, 2010 | 7 | 20 | 2 | 11 | 15.8% | 1.93 (0.48-7.72) | 2010 |
| Butz et al, 2014 | 7 | 22 | 1 | 11 | 8.1% | 3.50 (0.49-25.01) | 2014 |
| Gupta et al, 2015 | 12 | 53 | 6 | 18 | 54.7% | 0.68 (0.30-1.54) | 2015 |
| Total (95% CI) | | 116 | | 55 | 100.0% | 1.62 (0.94-2.79) | |
| Total events: 39 / 12 | | | | | | | |
| Heterogeneity: $\chi^2 = 6.37$, $df = 3$ ($P = .09$); $I^2 = 53%$ | | | | | | | |
| Test for overall effect: $Z = 1.74$ ($P = .08$) | | | | | | | |



| Study or Subgroup | Experimental Events | Experimental Total | Control Events | Control Total | Weight | RR, M-H, Fixed, 95% CI | Year |
|---|---------------------|--------------------|----------------|---------------|---------------|---------------------------|------|
| Konikoff et al, 2006 | 10 | 21 | 1 | 15 | 27.8% | 7.14 (1.02-50.00) | 2006 |
| Dohil et al, 2010 | 13 | 20 | 0 | 11 | 15.0% | 15.43 (1.00-237.06) | 2010 |
| Butz et al, 2014 | 12 | 22 | 0 | 11 | 15.5% | 13.04 (0.84-201.84) | 2014 |
| Gupta et al, 2015 | 23 | 53 | 0 | 18 | 17.5% | 18.54 (1.06-259.18) | 2015 |
| Dillon et al, 2017 | 8 | 18 | 1 | 17 | 24.3% | 7.56 (1.05-54.20) | 2017 |
| Total (95% CI) | | 134 | | 72 | 100.0% | 11.05 (3.80-32.15) | |
| Total events: 66 / 2 | | | | | | | |
| Heterogeneity: $\chi^2 = 0.49$, $df = 4$ ($P = .97$); $I^2 = 0%$ | | | | | | | |
| Test for overall effect: $Z = 4.41$ ($P < .0001$) | | | | | | | |

**Histologic response**

Steroids: 49.2%,
Control: 4.1%
RR: 11.05 (CI: 3.8-32.15)
p value: <0.0001

| Type of steroid | Symptom response | Histologic response |
|-----------------|------------------|---------------------|
| Budesonide | 27% vs 27% | 29% vs 2.3% |
| Fluticasone | 49.4% vs 15% | 38.9% vs 3.8% |

Adverse events (5%): Esophageal and oral candidiasis
No difference in blood pressure, growth, serum cortisol levels

Conclusion:

- Symptom resolution assessment has significant heterogeneity.
- Thus, more studies with objective parameters are needed.
- Histologic response is good with topical steroids.
- Better symptomatic response with fluticasone compared to budesonide.

EXPERT COMMENT

“Topical corticosteroids are the mainstay of treatment for EoE in children. Histological response is good. Symptom improvement is moderate. Oral and esophageal candidiasis are the most important adverse events.”

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With warm regards,

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Reference

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