

# Incidence of Pediatric Perforated Appendicitis during the COVID-19 Pandemic; a Systematic Review and Meta-Analysis

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## **Abstract:**

**Introduction:** COVID-19 has affected the pattern of referral to medical centers and quarantine against COVID-19 might delay referral and management of surgical emergencies. This study aimed to compare the pooled event rate of pediatric perforated appendicitis before and during the COVID-19 pandemic.

**Methods:** This was a systematic review and meta-analysis study based on the PRISMA guidelines. Scopus, Web of Sciences, and PubMed databases were searched for studies reporting the rate of perforated appendicitis based on the post-appendectomy observations or imaging methods. The Egger bias test and funnel plot were used to detect and depict publication bias. Statistical analysis was performed in Comprehensive Meta-analysis package version 3.

**Results:** Twelve studies were eligible for inclusion in our study. The pooled prevalence of pediatric perforated appendicitis in the pre-COVID era was 28.5% (CI95%: 28.3 to 28.7%) with a heterogeneity of 99%. In the COVID era, the event rate proportion was 39.4% (CI95%: 36.6 to 42.3%) with a heterogeneity of 99%. There was a significant difference in the subgroup analysis within the pre-COVID and COVID era ( $P < 0.001$ ), showing a higher perforation rate in the COVID era.

**Conclusion:** Our study showed that during the COVID-19 pandemic, the rate of perforated appendicitis has significantly increased in comparison to before the COVID-19 pandemic.

**Keywords:** Abdomen; Acute; Appendicitis; COVID-19; Ruptured.