|  |
| --- |
| **Empyema in children: increasing prevalence and new insights into management.** |
| Cameron, M13, Isles, A1, Kapur, N13, Suresh, S13, Schilling, S1, Twomey, R1, McBride, CA,23 Robinson, PD13 |
| *1Department of Paediatric Respiratory and Sleep Medicine, Queensland Children’s Hospital, Brisbane, Queensland, Australia**2Department of Paediatric Surgery, Queensland Children’s Hospital, Brisbane, Queensland, Australia**3Child Health Research Centre, University of Queensland, Brisbane, Queensland* |
| **Introduction/Aim:** Prevalence and severity of empyema in children is increasing.1 Interventional options include chest drain with fibrinolytics (CDF) or Video Assisted Thoracoscopic Surgery (VATS), with variations across countries.2 We audited our local approach at Queensland Children’s Hospital (QCH), a tertiary paediatric institution to describe the local experience. **Methods:** A retrospective analysis of cases (May-July) in years unaffected by COVID (2019, 2022, 2023). Treatment modality was clinically determined. Electronic medical records were searched for variables including prevalence, causative organisms, type of procedure (TOP), length of admission (LOA), LOA post procedure, chest drain duration, and (as a surrogate for associated pain) the duration of acute pain team service involvement (APS). Data were compared across the specified time periods using Mann Whitney *U* and chi-squared analysis as appropriate. **Results:** 62 children were treated: 13 in 2019, 15 in 2022, 34 in 2023. Organisms isolated were *S.pneumoniae* (48.3%), GAS (16.1%), *Mycoplasma spp.* (4.8%), *S.aureus* (3.2%), *H.influenzae* (1.6%), and no organism (25.8%). GAS was only detected in 2023 (29.4% of cases in 2023). VATS was the initial intervention in 51.6% vs. 35.4% CDF, with 13% IV antibiotics alone. CDF use increased in 2023 (46%) vs. other years (18%, p=0.043), with a consistent proportion of interventions performed by surgeons (p=1.00). LOA was numerically greater for CDF but did not reach statistical significance (p=0.09). CDF was associated with a significant increase in chest drain duration and duration of APS involvement vs. VATS (both p<0.01). Only 1 (5.3%) CDF subjects had VATS as a 2nd intervention procedure.

|  |  |  |  |
| --- | --- | --- | --- |
|  | VATS | CDF | p value |
| Number | 32 (51.6%) | 22 (35.4%) |  |
| Duration of admission | 10 (6-27) | 12 (6-47) | 0.09 |
| Day of initial intervention | 1 (0-8) | 0 (0-9) | 0.038 |
| Duration from intervention to discharge | 8 (5-26) | 12 (6-47) | 0.0039 |
| Duration of drain | 3 (2-19) | 8 (4-38) | <0.0001 |
| Duration of APS | 4 (0-12) | 8 (0-35) | 0.0117 |

**Conclusion:** Empyema rates increased in 2023 with increased rates of GAS. Recent shift in practice led to more CDF as initial intervention. CDF was associated with greater chest drain duration and pain service involvement vs. VATS. Future work will confirm these patterns in an expanded dataset and explore factors underlying this change in practice.**Grant Support:** None**Key Words:** Empyema, paediatric, management, prevalence.**Word Count:** 298 [1] Haggie S, et al. *Pediatr Infect Dis J*. 2019;38(12):e320-e5.[2] Redden MD, et al. *Cochrane Database Syst Rev*. 2017;3(3):Cd010651.  |