

Posters

11. Delivery of care

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219 A review of hospital and hospital in the home (HiTH) services at a paediatric cystic fibrosis (CF) centre

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Objectives: The Royal Children's Hospital in Melbourne cares for approximately 250 patients with CF. Patients admitted to hospital may spend some of the admission in HiTH whilst others remain in hospital. Routine physiotherapy service in hospital includes twice daily supervised sessions on weekdays, and once daily on weekends. HiTH physiotherapy service includes once daily supervised session on weekdays only. This review aimed to examine HiTH utilisation and compare HiTH outcomes to hospitalisation in CF.

Methods: A retrospective audit of patient records was performed covering a 24 month period.

Results: 246 patient records were reviewed. 338 admissions occurred for 117 patients. 13 admissions involved inter-hospital transfer and were not included further leaving 375 admissions. 221 (59%) admissions were conducted solely in hospital and 154 (41%) included some period of HiTH (mean 9.9 days, range 3–174). When 16 admissions of excessive length (>20 days) were excluded, average length of stay was 12.6 days for hospital-only admissions, and 14.4 days for those including HiTH ($p=0.00$). Hospital-only admissions had significantly lower FEV1 (% predicted) at admission (60.6% vs 70.7%, $p=0.00$) but resulted in a greater absolute percentage increase in FEV1 from admission to discharge (15.7% vs 8.7%, $p=0.02$).

Conclusion: This review shows that CF admissions when they involved were longer and resulted in a smaller increase in FEV1. However, these patients had higher FEV1 at admission. With increasing reliance on home-based provision of hospital services it is important to ensure that these services are similarly effective, and beneficial in the short and long-term for patients.

221 Outpatient parenteral antimicrobial therapy (OPAT) in patients with cystic fibrosis

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Objectives: To determine the frequency of complications during outpatient parenteral antimicrobial therapy (OPAT) administered through a peripheral venous line, PICC line or PORT-A-CATH (PAC).

Methods: Catheter related complications in patients with cystic fibrosis during OPAT were identified through a two-year retrospective review of patient files at Aarhus University Hospital supplemented by an interview.

Results: Of 167 CF patients about one third underwent OPAT through a peripheral venous line, PICC-line or PORT-A-CATH. 113 treatment episodes were reviewed, 64 with a peripheral venous line, 23 with PICC line and 26 with PAC. In 64 treatment episodes with the peripheral venous line, 51 (79.7%) used bolus injection and 27 (53.0%) episodes had complications (blockage, dislocation, pain). 13 (20.3%) treatments by infusion pumps caused no complications. 9/23 (39.1%) treatment episodes with PICC line had complications (infection, pain, thrombosis) requiring removal of the PICC line (range 1–201 days). 11/26 (42.3%) treatment episodes using PAC had complications (infection) requiring the PAC to be removed. The catheter has been in place from 4–3154 days (some still in place). Allergic reactions (no anaphylaxis) were experienced in 14/113 (12.4%) of the OPAT treatments and in 2/113 (1.8%) at initiation of the treatment.

Conclusion: Our data indicate that using an infusion pump to administer the antibiotic treatment minimized peripheral venous line complications. Percentage complications leading to removal of the catheter is about the same for PICC-lines and PACs but the average life-time of the latter is much longer. Allergic reactions are not a major problem.

220 Safety, tolerability and patient preference of intravenous colistimethate sodium delivered by bolus compared to infusion in adults with cystic fibrosis

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Background: Intravenous (IV) colistimethate sodium (CS) is used to treat pulmonary exacerbations in CF patients and is usually delivered by infusion over approximately 30 minutes. CS can also be delivered by bolus injection via Totally Implantable Venous Access Devices (TIVADs), but there is currently little evidence to support the safety, tolerability and patient preference.

Methods: We identified patients that had received CS by both infusion and bolus in our large regional adult CF centre from 2012–2013. We recorded baseline clinical parameters (at the time of switching to bolus injection) as well as the ease, convenience, time, side effects and patient preference in drawing up and delivering bolus CS.

Results: 26 subjects (14 male) (median (IQR) age 29 (25–35) yrs, FEV₁ 53 (39–68)% predicted) were recruited. These 26 subjects had received 84 courses of either bolus or infusion CS. Bolus was reported to be easier to reconstitute and administer (18 (69%) subjects), more convenient (26 (100%) subjects) and less time consuming (25 (96%) subjects). 4 subjects reported side effects with bolus injection, including self limiting dizziness and sensory disturbance. There was no evidence of renal impairment. Subjects reported that bolus injection was 'easier to use', 'more convenient' and 'time-saving'.

Conclusion: We suggest that bolus CS via TIVAD should be used more widely, since it is more convenient than infusion, generally well tolerated and safe. Bolus is also potentially more cost effective, since less time is required for preparation and delivery and no need for dilution and ancillaries.

222 Successful administration of continuous intravenous β -lactam therapy for allergic CF patients failing standard antibiotic desensitization

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Objectives: To review a new approach of treatment with continuous IV β lactam antibiotic following a desensitization protocol in allergic CF patients who previously failed a regular desensitization procedure and treatment course due to severe allergic reactions.

Methods: A retrospective observational study of all CF patients who underwent antibiotic desensitization procedures at our CF Center between 2005 and 2013.

Results: 33 desensitization procedures were performed in 9 CF patients involving 6 different antibiotics with 15 different patient/drug combinations. 17 desensitizations were standard procedures followed by a regular treatment course. 5 of these 17 procedures failed, 3 due to severe allergic reactions occurring during the full treatment course after successfully completing the desensitization. 16 desensitization procedures, performed in patients who previously failed the standard procedure or patients at high risk for a life threatening allergic reaction, were followed by a continuous IV infusion of a beta lactam antibiotic. All 16 procedures were completed successfully. One adverse event, acute urticaria during the last step of the desensitization procedure, was reported, no adverse events were reported during the continuous IV treatment course.

Conclusion: Desensitization followed by continuous IV beta lactam infusion allows lower dosage, slower dose administration rate and maintenance of low serum drug levels. This approach appears to be safer than a desensitization followed by a regular dose treatment course. We recommend utilizing this approach in all patients at high risk to develop a severe allergic reaction from a β lactam antibiotic.