Insulin Pump(IP) compared to those on Multiple Daily Injection(MDI) insulin regimen and assess if modality of BG monitoring has an impact on GC. To further assess the correlation of GC with age of the patient. Secondary outcomes included severe hypoglycemia and DKA episodes.

Methods Retrospective data was collected from FilePromaker database from June 2019 to October 2020 for all CYP T1D under the care of the Paediatric Diabetic Unit. This included data on age, management regime, modality of BG monitoring, HbA1c (laboratory and validated point of care blood tests at each diabetes related appointment), Diabetic Ketoacidosis (DKA) readmissions and severe hypoglycemia episodes. Mean HbA1c(mHb) was calculated for each patient during the study period in mmol/mol. GC was compared in two groups IP and MDI. Further analysis to evaluate impact of modality used for BG monitoring was undertaken. This included finger prick self blood glucose monitoring (SBGM) with a smart BG meter, flash glucose monitoring (FGM) or continuous glucose monitor (CGM). We also further looked at GC for children under 12 years(y) and over 12y in each group.

Abstract 94 Table 1 Insulin Delivery modality vs BG Monitoring modality vs Mean HbA1C

Mean HbA1C (mmol/mol)							
MDI(143)	CGM		FGM		SBGM		
	NO.		NO.		NO.		
<12	13	64.5	21	64.9	11	61.5	
>12	16		34		48	72.1	
Overall	29		55		59		
IP (98)							
<12	25	56.1	8	63.9	0		
>12	20		22		23	64.4	
Overall	45		30		23		

Results

- Total CYP T1D included in study were 241.
- MDI users were 143(60%) and IP users were 98(40%).
- Mean HbA1C in mmol/mol in IP group was 61.9(SD 10.23) & MDI group was 71.1(SD 17.34) which was statistically significant (t value of 4.74 and significance $p < 0.00$).
- GC overall in <12y vs >12y with mHb 60.98 vs 69.09 (t = -58.91, $p < 0.00$).
- In MDI group: mHb was highest in patients on FGM >12y=78.4; & lowest in those on SBGM <12y=61.5.
- However in Patients on IP: those on CGM and <12y had the lowest mHb of 56.1 and highest in those using FGM >12y=66.
- Readmissions with DKA episodes were 3, all above 12y of age, MDI(2) vs IP(1).
- Admissions with severe hypoglycemia were 8,75% on MDI and 25% on IP.
- Based on modality of BG monitoring: best GC noted in group IP using CGM vs SBGM in group MDI. GC was worst in those using FGM in both groups.

Conclusions

- IP usage led to statistically significant improved glycemic outcomes irrespective of age.

- CGM usage results in improved GC irrespective of whether using IP or MDI.
- FGM was beneficial in only those younger than 12y & offered no advantage in improvement of GC over SBGM in >12y irrespective of modality of Insulin delivery.
- Overall GC was best in <12y irrespective of Insulin Delivery Modality
- Complications of DKA and severe hypoglycemia episodes were more pronounced in those on MDI.

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STUDY OF ASSESSMENT OF CARDIAC AND HEPATIC IRON OVERLOAD IN THALASSEMIA SYNDROME CASES

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Background Chelation therapy has been used to eliminate excess iron. The effective management of thalassemic patients, especially in the paediatric age group, requires optimal monitoring of the toxic effects of both iron overload and excessive chelation therapy. Serum ferritin has been widely used as a surrogate marker and a target ferritin level of 1,000 ng/ml is generally recommended.

Objectives Study of assessment of cardiac and hepatic iron overload in thalassemia syndrome cases

Methods This study was conducted in a tertiary care hospital where thalassemic patients receive regular transfusions. Patients aged 13–33 years coming for routine blood transfusions at the hospital blood bank and also out-patients coming for regular follow up and receiving transfusions at other blood transfusion centres between November 2011 and November 2012 were included in the study. A detailed history and physical examination were completed for all cases and the findings recorded on a proforma.

Results Out of 53 cases the average hepatic iron overload over a study period shows that 34% (18) cases have severe hepatic iron overload, 39.6% (21) cases have moderate hepatic iron overload, 17% (9) cases have mild hepatic iron overload and only 9.4% cases have normal hepatic iron status.

Conclusions Arterial stiffness increases significantly as cardiac iron overload increases but there is no correlation between arterial stiffness and hepatic iron overload. As stiffness index is an indirect measure of CIMT and early atherosclerosis, it also shows and indirect correlation of CIMT with increasing cardiac iron overload. Thus our findings support the hypothesis that iron overload is a risk factor for early atherosclerosis and cardiovascular disease.

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SAFETY AND EFFICACY OF NURSE-LED SALINE ENEMA ADMINISTRATION FOR THE TREATMENT OF MECONIUM OBSTRUCTION OF PREMATURITY

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Background Meconium obstruction of prematurity (MOP) is the third most common cause of neonatal intestinal obstruction, especially in preterm infants. Delayed diagnosis and treatment of the condition can affect morbidity, mortality, hospital stay and the treatment cost of affected preterm infants. MOP can also lead to sub-acute/acute intestinal obstruction

necessitating the use of contrast enema and laparotomy, both of which increase the risks of necrotizing enterocolitis (NEC) and intestinal perforation. The need for surgical intervention and anaesthesia has a potential negative impact on the infant's future neurodevelopment.

Objectives Our pilot trial demonstrated that twice-daily saline enema is a feasible intervention to reduce time to reach full enteral feeds in very low birth weight (VLBW) infants. This study aims to explore the efficacy of saline enema in the treatment of MOP with respect to feasibility and safety by secondary analysis of data from the primary study which was a prospective open-label randomized controlled trial. We hypothesized that twice daily saline enema is an effective, feasible and safe intervention to treat MOP in VLBW infants as compared to glycerin suppositories (control).

Methods In this prospective open-label, pilot, randomized controlled trial, 61 infants who failed to pass meconium within 48 hours of birth were randomized to receive either twice-daily normal saline enema (SE) or a GS until they reached full enteral feeds (110 mL/kg/day). 28 were randomized to receive twice daily saline enemas (intervention) and 33 were controls who were treated conventionally with a glycerin suppositories as a control (GS, 2,000 mg, a quarter unit, 4 doses 12h apart). A standardized feeding protocol and departmental guidelines for other aspects of neonatal intensive care were used in all subjects. The primary outcomes was treatment failure, defined as the need for an additional intervention. Adverse events (AE) such as colonic perforation and NEC were also recorded. We performed both Intention to Treat (ITT) and Per Protocol (PP) analyses. Data on efficacy, safety, process and resource feasibility outcomes were monitored.

Results Sixty-one infants were randomized, with 28 infants managed with RWs and 33 with glycerin suppositories. There was no treatment failure in the SE arm. Two infants were referred to surgeons, one with difficulty in passing the catheter and the other for blood-stained meconium. However, both infants were subsequently successfully managed with saline enema administered by pediatric surgeons. Two infants met the criteria for treatment failure in the GS arm. One infant was managed with contrast enema and the other was managed with SE administered by surgeons. Results from the ITT analysis did not differ substantially from the PP analysis.

Conclusions Analysis of outcomes of our study suggest that nurse administered twice daily saline enema is an efficacious, safe and cost-effective strategy for meconium obstruction of prematurity as compared to glycerin suppositories. Study design of future trials may be refined, to address the limitations of this study such as larger sample size, inclusion of infants with birth weight less than 750 grams, infants with atypical presentation and refinement of treatment failure criteria.

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DISRUPTION OF PAEDIATRIC ORTHOPAEDIC HOSPITAL SERVICES DUE TO THE COVID-19 PANDEMIC IN A REGION WITH MINIMAL COVID-19 ILLNESS

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Background The Women's and Children's Hospital (WCH) in South Australia is a major tertiary referral teaching hospital with a Level 1 major paediatric trauma centre, receiving referrals from within South Australia and neighbouring states.

The setting for this study was unique as the hospital has no admitted cases of COVID-19 illness and, as such, this study represents the effects of government restrictions rather than the disease itself.

Objectives To evaluate the impact of the COVID-19 pandemic on paediatric orthopaedic services in a major paediatric tertiary hospital in South Australia.

Methods A retrospective audit was conducted of orthopaedic activity at a major paediatric tertiary referral hospital in South Australia, including a level 1 major paediatric trauma centre, for the period between 16 March 2020 and 26 April 2020 and compared with the corresponding time period in 2019 (18 March 2019 to 28 April 2019). Emergency Department (ED) presentations for musculoskeletal conditions, including fractures, were studied. Orthopaedic outpatient clinic, admission and operating theatre activity data were also assessed. No patients were admitted with COVID-19 illness at the hospital.

Results 621 paediatric patients presented to the ED with orthopaedic complaints during the 6-week period, compared to 997 in 2019, representing a 37.7% reduction. However, there was minimal change in the number of ED presentations requiring hospital admission (110 in 2020 versus 116 in 2019). Among patients discharged directly from ED, 27.3% received hospital outpatient referral (versus 39.1% in 2019), with the remaining patients referred to external health services including GP, mental health services or private health providers) or discharged directly.

A total of 982 and 712 appointments (including face-to-face and telehealth) were scheduled in 2019 and 2020 respectively (table 3). 20.6% of patients failed to attend their appointments in 2020, up from 14.5% in 2019. There was a 509.8% increase in telehealth (video and phone) outpatient consultations compared to 2019 and a 60.6% decline in face-to-face appointments.

There was a total of 144 orthopaedic admissions (elective and emergency) compared to 184 in 2019, representing a 21.7% decline. Elective admissions were halved from 68 in 2019 to 34 while emergency admissions reduced by 5.2% from 116 to 110, demonstrating an overall shift in total workload towards emergency surgeries. Despite an overall downtrend in hospital admissions, elective and emergency admissions for children under 7 remained unchanged during the study period (32.5% reduction in children aged 7 and above).

Conclusions Musculoskeletal problems are the sixth most common presentation in children and adolescents and a better understanding of the impact of this pandemic provides guidance for planning in the face of future pandemics, or a second wave of COVID-19.

Despite an overall decline in all paediatric orthopaedic hospital activities, the number of emergency admissions for musculoskeletal conditions did not change. Elective and emergency admissions for children under 7 remained unchanged. There is a significant uptrend in the use of outpatient telehealth services. Appropriate planning and hospital resources allocation are necessary to meet this service requirement in future pandemics.