

## 188 NOMOGRAM OF PEAK EXPIRATORY FLOW RATE VALUES FOR ADOLESCENTS IN A STATE IN SOUTHEAST NIGERIA

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**Background** Due to the presence of sources of air pollutants (multiple quarry sites and rice mills) in the study area, Peak Expiratory Flow Rate (PEFR) obtained in other parts of the country may not be safely extrapolated to this region. Additionally, the reality of the need to classify asthma exacerbations during emergencies or initial visits where a personal best PEFR is not available has made the development of local PEFR reference values paramount.

**Objectives** This study was undertaken to develop a nomogram of peak expiratory flow rate values for adolescents in Ebonyi State, Nigeria.

**Methods** A cross-sectional study was carried out among 970 adolescents from April to June 2018, using a multistage random sampling technique. The PEFR for each subject was determined by the standard miniWright peak flow meter. All data obtained were recorded in a proforma and analysed with Statistical Package for the Social Sciences version 21. The PEFR of the subjects were summarised using mean and standard deviation. Linear regression analysis was used to test the relationship between PEFR and its predictors.

**Results** The overall mean PEFR value was  $332 \pm 83$  L/min. The mean PEFR was  $359 \pm 96$  L/min in males and  $312 \pm 64$  L/min in females ( $t = 9.09$ ,  $p < 0.001$ ). The predictive equation was derived as follows:

Males:  $PEFR = 2 * Height + 7.8 * Age + 1.7 * Weight - 152.2$

Females:  $PEFR = 2 * Height + 7.8 * Age + 1.7 * Weight - 192.9$

A PEFR nomogram for males and females was created from the equation (a sample for males is represented in table 1).

**Conclusions** Predicted PEFR values were represented in a nomogram as a reference to the adolescent population in the state and may be used to evaluate PEFR in health facilities in the region.

## 189 LEVETIRACETAM AS THE FIRST LINE TREATMENT FOR NEONATAL SEIZURES – A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background** Seizures are the most significant neonatal emergency, with implications on neurodevelopment and mortality. Evidence for the best management of them still remains limited. Phenobarbital is currently the most used drug for neonatal seizure management. The use of Levetiracetam as an alternative is increasing. It is hypothesised to have a better safety profile.

**Objectives** Assess the effectiveness and safety of levetiracetam when used as the first line treatment of neonatal seizures.

**Methods** Three electronic databases; MEDLINE, EMBASE, and Web of Science were systematically searched from inception until 20th November 2020. Randomized controlled trials (RCTs) and observational studies that included term and pre-term neonates were eligible for inclusion. The primary outcome measure was effectiveness of levetiracetam, defined as seizure cessation within 24 hours of starting treatment. Secondary outcomes included short-term adverse events, mortality before discharge and long-term neurodevelopmental outcomes.

**Results** 14 studies assessing 1,188 neonates were included. Four were RCTs, three observational trials with phenobarbital as the control arm and seven observational studies of levetiracetam with no control arm. Pooled efficacy of levetiracetam from observational studies was 45% (95% CI- 34%-57%). Meta-analysis of RCTs evaluating levetiracetam versus phenobarbital showed that both were equally effective [RR (95%

**Abstract 188 Table 1** Nomogram of PEFR values in Litres/Minute – Male

Weight (kg)	Age in year (Median height in cm)									
	10 (143)	11 (143)	12 (148)	13 (152)	14 (155)	15 (159)	16 (163)	17 (165)	18 (165)	19 (165)
20	246	254	271	287	301	317	333	344	352	360
25	254	262	280	296	310	325	341	353	361	369
30	263	271	288	304	318	334	350	361	369	377
35	271	279	297	313	327	342	358	370	378	386
40	280	288	305	321	335	351	367	378	386	394
45	288	296	314	330	344	359	375	387	395	403
50	297	305	322	338	352	368	384	395	403	411
55	305	313	331	347	361	376	392	404	412	420
60	314	322	339	355	369	385	401	412	420	428
65	322	330	348	364	378	393	409	421	429	437
70	331	339	356	372	386	402	418	429	437	445
75	339	347	365	381	395	410	426	438	446	454
80	348	356	373	389	403	419	435	446	454	462
85	356	364	382	398	412	427	443	455	463	471
90	365	373	390	406	420	436	452	463	471	479
95	373	381	399	415	429	444	460	472	480	488

CI) - 0.6 (0.3–1.20)] (GRADE – Very low). Levetiracetam resulted in a lower risk of short-term adverse events compared to phenobarbital [RR (95% CI) - 0.24 (0.06–0.92)] (GRADE – Moderate).

**Conclusions** Very low-quality evidence suggests that levetiracetam might not be more effective than phenobarbital. Moderate quality evidence indicates levetiracetam is associated with a lower risk of adverse events.

### 191 AN AUDIT OF THE TIME FROM BIRTH TO FIRST MILK FEED IN PRETERM INFANTS LESS THAN 32 WEEKS GESTATION AND OF LOW-BIRTH-WEIGHT INFANTS UNDER 1500G

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**Background** There are many benefits to starting breast milk feeds early for both preterm and low-birth-weight infants including: the immunological benefits of receiving breast milk, potential to establish full enteral feeds earlier and lowering the risk of necrotising enterocolitis.

**Objectives** Trust guidelines state that all infants should receive colostrum in the first day of life, preferably within the first 6 hours. The objectives of this audit were to evaluate whether this is achieved in infants <32 weeks gestation or with birth weights <1500g and to look at the impact of gestation on the time from birth to first milk feed.

**Methods** Inclusion criteria were infants born <32 weeks gestation or with a birthweight of <1500g. The length of time from birth to first milk feed in hours (including either colostrum mouth care or first enteral feed) was evaluated on a total of 52 inpatients on the neonatal unit. Data was initially collected in December 2018 on 24 infants. This was followed by interventions including: education of parents and the multi-disciplinary team about the importance of the early colostrum administration and collaboration between the neonatal and maternity teams to provide expressing packs to mother's pre-delivery. Further data was then collected on 28 infants in July 2020, all born during the first wave of the COVID-19 pandemic. The data from 2018 and 2020 were compared and the impact of gestation was analysed by comparing infants born <27 weeks and ≥27 weeks.

**Results** In 100% of infants in the study the first milk received was human milk (either mother's own milk or donor breast milk) and all infants received their first milk within 96 hours of birth. Overall, 19.2% of infants received their first milk within 6 hours of birth and 63.5% within 24 hours. When comparing the 2018 and 2020 data, a similar percentage of infants received their first milk feed in <24 hours: 62.5% in 2018 and 64.3% in 2020, and at <6 hours: 20.8% in 2018 and 17.9% in 2020. Infants ≥27 weeks received their first milk feed sooner than infants <27 weeks. In extreme preterm infants <27 weeks, 10% received their first milk feed in <6 hours and 55% in <24 hours. Comparably in preterm infants ≥27 weeks, 25% received their first milk feed in <6 hours and 68.8% in <24 hours. In both groups, 90% of infants received their first milk feed within 48 hours of birth.

**Conclusions** The results in 2018 and 2020 were similar, suggesting that the interventions made during this audit cycle had no observed increase in delivery efficiency of the first milk

feed. The second cycle of the audit was carried out during the COVID-19 pandemic but even with many restrictions there has been no observed adverse impact on the delivery of the first milk to this group of neonates. Future focus should improve the prompt delivery of the first milk feed for extreme preterm neonates through discussing expressing colostrum with mother's pre-delivery and giving colostrum mouth-care early to these infants.

### 193 LUDWIG'S ANGINA-A CASE REPORT

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**Background** Ludwig's angina was first reported by Wilhelm Frederick von Ludwig in 1836. It is a severe and quickly spreading cellulitis characterized by significant involvement of the sub-mandibular, sublingual and occasionally sub-mental space. This condition is potentially fatal if not treated aggressively and promptly due to the cellulitis leading to airway compromise. Prior to antibiotics in the middle of the 20th century, mortality rates were more than 50%.

Most cases of Ludwig's angina documented occur more commonly in adult males and secondary to dental infection (70–90%) with mandibular molars (unilateral or bilateral involvement) as the main cause. When Ludwig's angina occurs in the paediatric population, odontogenic cause is only 50%. Some reported causes include salivary gland infection due to sialadenitis, oral tumour infection and infection following intraoral soft tissues surgery. A precipitating aetiology may be difficult to determine, the most frequently involved microorganism is streptococci and staphylococci species. Diagnosis of the condition is normally made through history and physical examination, other findings include fever and raised white cell count and raised CRP.

**Objectives** The patient presented here shows a severe case of a Ludwig's angina found in a healthy adolescent male, an age group in which the condition is less common.

**Methods** electronic case records were used to collect data

**Results** 13-year-old boy presented with increased facial swelling, drooling, swollen protruding tongue, unable to speak, soft stridor and unable to open mouth.

Had had root canal treatment 7 days prior and had also attended A&E 2 days previously with fever, pain on swallowing associated with puffiness around cheeks and eyes. He was assessed and sent home on oral antibiotics.

He had no significant past medical history (extraction of 10 deciduous teeth at 7 yrs).

On presentation to A&E he had a obstructed airway, maintaining saturations 96% room air, febrile, he was tachypnoeic, tachycardiac(122/min) and hypertensive (113/99 mmHg). He was managed with nebulized adrenaline, dexamethasone and IV antibiotics. Clinical diagnosis was Ludwig's angina

He underwent awake fibro-optic intubation, in theatre he underwent dental extraction LL6 (noted to have copious pus) +UL6, underwent tracheostomy for airway management.

Was transferred to HDU post procedure. CT scan showed - fluid collection containing flecks of air within the left parapharyngeal space, extending antero-superiorly to left postnasal space, laterally insinuating between the masseter and left medial pterygoid muscle. Posteriorly, extending to lie just below left bony external acoustic canal.