

results are in agreement with recent studies that report higher borderline intellectual functioning and lower IQ scores in school-aged LPT.

Parental assessment on LPT showed increasing visual and hearing impairment until school-age, difficulties in language/speech until 5y.o., a high rate of grade retention, increased signs of childhood behavior problems, but not higher rates of ADHD. LPT's parents should be informed about the possible late complications. Special attention and follow-up must be paid to LPT from the beginning for timely detection and intervention in capacities that can impair neurodevelopment, hearing-speech-language and learning capability of these children.

471

#### CLINICAL AND PREVENTIVE EFFICACY OF PHYTOPREPARATIONS IN PRE-SCHOOL CHILDREN WITH ADENOTONSILLAR PATHOLOGY

Vera Vavilova\*, Aleksander Vavilov, Asya Cherkaeva, Irina Nechaeva, Vitalyi Tiuliukin. *Kemerovo State Medical University*

10.1136/archdischild-2021-europaediatrics.471

Assessing efficacy of Tonsilgon N in pre-school children as an etiotropic drug in complex therapy of adenotonsillar pathology at the rehabilitation stage.

Within the period from 2011 to 2015, 1,076 children (aged from 2 to 5 years) with a history of pathology of nasopharyngeal and palatine tonsils in 100% of cases were reviewed. Pre-school children were given Tonsilgon N phytopreparation in the form of drops in age-specific doses within 30 days.

The control group included 200 children. The phytopreparation efficacy was analyzed before and after the preventive therapy.

A year prior to the preventive therapy, degree II nasopharyngeal tonsil hypertrophy complicated by adenoiditis was noted in 71.3% of children in the treatment group and in 74.5% of children in the control group. Degree III nasopharyngeal tonsil hypertrophy made 28.7% and 25.5%, respectively. A year after the rehabilitation therapy, only 32.9% of patients in the treatment group did not show improvement in the clinical presentation. Symptoms of adenoiditis were practically relieved in half of the patients, nasal breathing was restored in 95.8% of patients, the size of a nasopharyngeal tonsil was reduced from degree II to degree I in 64.9% of patients.

Normalization of the rhinoscopy presentation was noted in 82% of patients, 77.9% of patients showed reduction of the ARI rate from 5–8 to 2–3 times a year. Endoscopic control confirmed reduction of size of both nasopharyngeal and palatine tonsils in 64.9% of patients. The hypertrophy degree of nasopharyngeal and palatine tonsils in pre-school children not receiving Tonsilgon N phytopreparation did not show any change. In addition, hypertrophy demonstrated increase from 74.5% to 83% over time.

Prospective study of children receiving Tonsilgon N as a rehabilitation method demonstrated its efficacy on immune development of the respiratory tract. The obtained data allow us to recommend Tonsilgon N to be included in programs of immune rehabilitation and prevention of exacerbation of adenotonsillar pathology.

472

#### EUROPEAN ONLINE SEARCH PATTERNS OF FLU VACCINATION DURING THE COVID-19 PANDEMIC

Inês Silva Costa\*, Madalena Meira Nisa, Lígia M Ferreira. *Pediatrics Department, Centro Hospitalar Tondela-Viseu EPE, Portugal*

10.1136/archdischild-2021-europaediatrics.472

Google Trends (GT) is an online data tool that measures Relative Search Volume (RSV). In medical settings, it has proven to be associated with patient's perceptions and even changes in search for medical care. To identify a possible increase in online search patterns about flu vaccination during the COVID-19 pandemic, we conducted a GT analysis in a group of European countries.

A GT analysis with the GT topic 'flu vaccine' was performed between 2016 and 2020. Retrieved RSV was represented between 0 and 100 (highest interest in the query). Two groups of countries were selected, according to the reported incidence rate of COVID-19 by the European Center for Disease Prevention and Control, between week 37 and 41 of 2020, in children under 15 years (highest incidence: Belgium, Czech Republic, Spain, Portugal and Denmark; lowest incidence: Poland, Sweden, Norway, Finland and Greece).

Flu vaccination season (FVS) is considered to be, yearly, between week 38 and 44 and COVID-19 pandemic (CVP) from week 4 of 2020, as the first reported case in Europe was diagnosed.

Median RSV about 'flu vaccine', before the COVID-19 pandemic, varied between 0 (Czech Republic and Portugal) and 4 (Belgium and Poland) outside the FVS and between 0 (Czech Republic) and 31 (Greece) during the FVS.

As the CVP settled, the online search increased significantly, outside the FVS in every country ( $p < 0.05$ ), except in Czech Republic ( $p = 0.216$ ). During the FVS, the search patterns also increased in every studied country ( $p < 0.05$ ), but not in Finland ( $p = 0.214$ ).

As to the percentage of increase in RSV (during the FVS), before and during the CVP, the top 5 countries were, in order: Czech Republic (>5200%), Spain (484.6%), Poland (400.0%), Denmark (311.8%) and Portugal (280%). Belgium placed ninth in increase rate, with 149.0%.

Flu vaccination is one of the most acknowledged public health measures, and its online search interest usually peaks as the FVS begins every year.

During the FVS in 2020, 4 out of the 5 countries with the highest incidence of COVID-19 in children <15 years ranked in the top 5 studied countries with the highest increase in online search of flu vaccine.

473

#### VALIDITY OF THE AGES AND STAGES QUESTIONNAIRE FOR DETECTING LATER BELOW AVERAGE COGNITIVE FUNCTION

<sup>1</sup>Andrea Bowe\*, <sup>2</sup>Jonathan Hourihane, <sup>3</sup>Anthony Staines, <sup>4</sup>Deirdre Murray. <sup>1</sup>INFANT Research Centre, Paediatric Academic Unit, Cork University Hospital, Wilton, Cork, Ireland; <sup>2</sup>INFANT Research Centre, Cork, Ireland; Paediatrics, Royal College of Surgeons in Ireland, Dublin, Ireland; <sup>3</sup>School of Nursing, Psychotherapy and Community Health, Dublin City University, Dublin, Ireland; <sup>4</sup>INFANT Research Centre, Cork, Ireland; Department of Paediatrics and Child Health, Cork University Maternity Hospital, Wilton, Cork, Ireland

10.1136/archdischild-2021-europaediatrics.473

The first 1000 days of life are a period of unique sensitivity and plasticity during which critical cognitive abilities are formed. Routine developmental screening tools aim to identify infants who would benefit from early intervention. While these tools have been validated for detecting children with more severe neurodevelopmental disorders, their ability to identify the larger proportion with below average cognitive function has not been sufficiently explored. The aim of this study was to examine the validity of the Ages and Stages Questionnaire (ASQ), for identifying children with later below average cognitive function.

The study population (n=8260) is formed from two national cohort studies, the Growing Up in Ireland (GUI) Infant cohort (n=7,444) and the Cork BASELINE cohort (n=816). The ASQ was completed at 8 months and 24-27 months respectively. Cognitive assessments were performed at age 5. Those scoring <1 standard deviation (SD) below the mean were categorised as below average cognitive function. Applying the currently used onward referral criterion (one fail in any domain) the sensitivity, specificity, positive and negative predictive values of the 8- and 24-27- month ASQ for detecting children with later below average cognitive function were calculated.

In the GUI cohort n=905 participants (12.5%) had scores <1SD below the mean on the Picture Similarities Scale. In the BASELINE cohort n=101 participants (13.4%) had an IQ <1SD below the cohort mean. Applying the currently used onward referral criterion (failing in any one domain in the ASQ), the sensitivity of the 8-month ASQ for detecting children scoring <1SD below the mean on the Picture Similarities Scale at age 5 was 16.4% (95% CI 14.0-19.0). The specificity was 92.0% (95% CI 91.3-92.6), with a positive predictive value (PPV) of 22.6% (95% CI 19.5-26.0) and a negative predictive value (NPV) of 88.5% (95% CI 87.7%-89.2%).

In the BASELINE cohort n=468 participants completed the 24-month ASQ and n=316 the 27-month ASQ. Applying the same onward referral criterion to the 24- and 27- month ASQ combined, the sensitivity for detecting those with an IQ <1SD below the cohort mean was 20.8% (95% CI 13.6-30.2) and the specificity was 91.1% (95% CI 88.6-93.2).

The ASQ has a low sensitivity for identifying children with below average cognitive function at age 5. The findings of this study suggest that if we are to intervene early in the developmental trajectory for children with below average cognitive function alternative methods of identifying high risk infants are needed.

474

#### EMOTIONAL BEHAVIOURAL DEVELOPMENT IN CHILDREN WITH BELOW AVERAGE COGNITIVE FUNCTION

Andrea Bowe\*, Deirdre Murray, Anthony Staines. *INFANT Research Centre, Cork University Hospital, Ireland*

10.1136/archdischild-2021-europaediatrics.474

Children with below average cognitive function represent a substantial yet under-researched population for whom academic and social demands, which increase in complexity year by year, pose significant challenge. Effects on emotional-behavioural development (EBD) are not well understood. The aim of this study was to compare trajectories of EBD for children with and without below average cognitive function.

The underlying hypothesis was that trajectories of EBD would differ between groups, with divergence occurring as children are subject to increasingly complex cognitive demands.

Participants consist of 7,000 children and caregivers who completed the Growing Up in Ireland survey at age 3,5 and 9 years. Cognitive function was measured at age 3 using the Picture Similarities Scale. A t-score 1-2 standard deviations below the mean was categorised as below average cognitive function (n=767), and scores above this categorised as average cognitive function (n=6418). EBD was measured using the Strengths and Difficulties Questionnaire (SDQ) at age 3,5 and 9. Repeated measures ANOVA was used to examine the difference between the overall group means across the repeated measures of SDQ, the SDQ change over time, and the interaction between cognitive group and change over time. Further analysis of trajectories was performed using latent growth curve analysis.

Compared to those with average cognitive function, a significantly higher proportion of children with below average function were male (61.8% v 38.2%,  $\chi^2$  (1, N=7134) = 42.07 p<0.001), born to a single parent family (22.4% v 14.7%,  $\chi^2$  (1, N=7134) = 23.15 p<0.001), and had a parent who smoked (35.6% v 25.8%,  $\chi^2$  (1, N=7134) = 33.23 p<0.001). Children with below average cognitive function had significantly higher mean total SDQ scores at all ages. Repeated measures ANOVA demonstrated a significant group-by-time interaction effect (F(2,7182)=4.649, p=0.010). The mean difference (MD) in SDQ between cognitive groups increased over time (MD Age 3:0.87, 95% confidence interval (CI) 0.53-1.21, Age 9 MD:1.49,95% CI 1.08-1.91). For those with average or above cognitive function the overall SDQ decreased between age 3-9 (MD: -0.49 95% CI -0.65—0.33). This decrease was not seen for those with below average function, who had a non-statistically significant increase in SDQ between age 3-9.

Children with below average cognitive function experience higher and worsening mean SDQ scores throughout childhood. A scalable method of early identification of children at risk for below average cognitive function should be a research priority for public health, enabling early intervention for cognitive and adaptive outcomes.

475

#### ASSISTED REPRODUCTIVE TECHNOLOGY TECHNIQUES AND RISK FOR NEURODEVELOPMENTAL DISORDERS

Lucija Bajkovec\*, Ines Begović, Ana-Marija Đaković, Milan Milošević, Urelja Rodin, Aida Mujkić. *Institute of Emergency Medicine of Medjmurje County*

10.1136/archdischild-2021-europaediatrics.475

Assisted reproductive technology (ART) techniques are becoming more common nowadays, due to the growing incidence of infertility. Such pregnancies are more often multiple, which carries the risk of premature birth and lower birth weight and, accordingly, a higher risk of occurrence of neurodevelopmental disorders. Aside from the before mentioned, other known risk factors for neurodevelopmental disorders include chorioamnionitis, gestational diabetes, and respiratory distress. The aim of the study was to compare the prevalence of risk factors for neurodevelopmental disorders between two groups of children born preterm, those conceived through ART and those conceived naturally.