

ELECTROENCEPHALOGRAPHIC RESULTS IN CHILDREN WITH COVID-19

Feghiu Ludmila^{1,3}, Călcii Cornelia^{1,2}, Sprincean Mariana^{1,2}, Lupusor Nadejda^{1,2}, Griu Corina¹, Cuznet Ludmila^{1,2}, Hadjiu Svetlana^{1,2}

¹Nicolae Testemitanu State University of Medicine and Pharmacy, Chisinau, Republic of Moldova,

²Institute of Mother and Child Health Care, Chisinau, Republic of Moldova,

³The national center of Epileptology, Chisinau, Republic of Moldova.

Introduction

COVID-19 infection can cause various changes involving all structures of the central and peripheral nervous system, as well as neurophysiological abnormalities on the electroencephalographic (EEG) pathway.

Keywords

COVID-19, electroencephalography (EEG), epileptiform discharges (ED), children.

Purpose

Evaluation of EEG results in children who underwent COVID-19 based on the analysis of retrospective data, in order to assess the type of neurophysiological abnormalities.

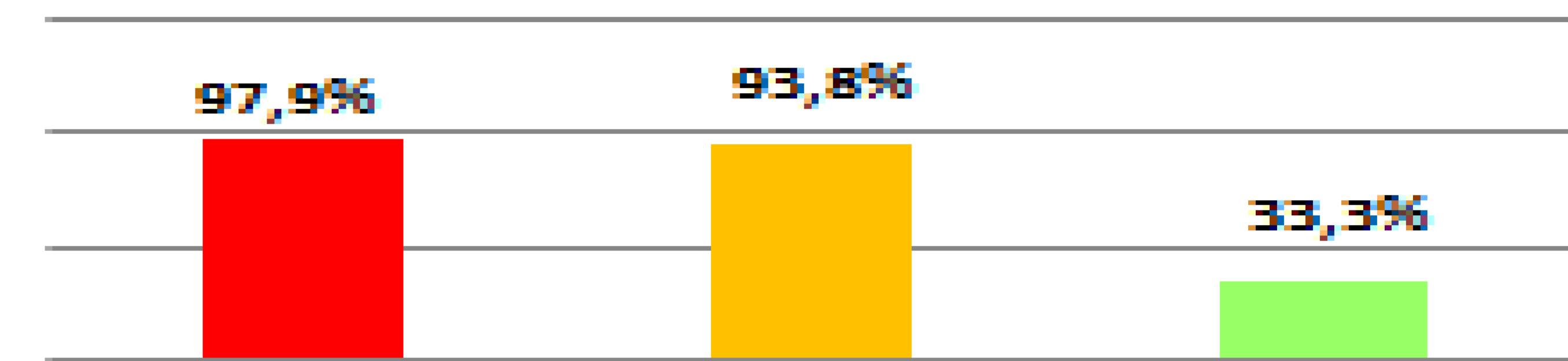
Material and methods

Retrospective study analyzing 48 EEG results of children who had COVID-19, aged between 6 months and 5 years. The presence of the infection was confirmed by molecular RT-PCR tests. All children showed various neurological symptoms. The EEG results were described by qualified specialists in the field. The SPSS program was used for statistical analysis..

Results

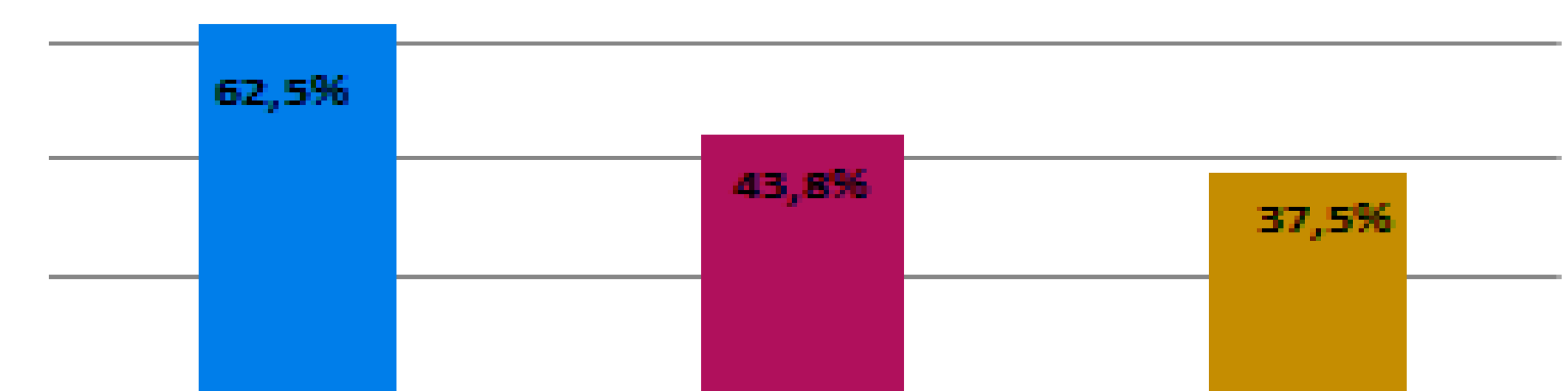
EEG - abnormal background activity (97.9% [95% CI: 95.84-99.96]; $p < 0.01$), slow diffuse (93.8% [95% CI: 90.29-97.31]; $p < 0.01$); epileptiform discharges (ED) (33.3% [95% CI: 40.1 -

EEG results (n= 48), (%)



26.5]; $p < 0.01$). ED – common in seizures (62.5% [95% CI: 74.6–50.4]; $p = 0.52$) and in those with a history of epilepsy (43.8% [95% CI: 56.2–31.4]; $p = 0.47$), compared with those without such manifestations (37.5%). Some children with ED had persistent seizures 1-2 weeks after illness (31.3% [95% CI: 42.89-19.71]; $p = 0.054$), others - more than one month later (12.5% [95%: 20.77- 4.23]; $p = 0.075$). Others developed drug-resistant epilepsy (18.8% [95% CI: 28.56-9.04]; $p = 0.08$).

Growht rate of ED



Conclusions

COVID-19 often causes EEG changes with abnormal background activity and diffuse slow motion along the route. ED are uncommon, with an increased rate in children with seizures and a history of epilepsy. Likewise, this infection can cause post-infectious epilepsy.