



**Figure 2** Subpleural consolidation at the level of the posterior basal region of the right lung (arrow).

The case presented here was a case of horizontal transmission, as the patient lived with other 8 individuals in the household, of who 3 reported cold symptoms, which led to testing of household members despite the absence of fever.

We ought to highlight the importance of the chest ultrasound, an aspect that has not been described in previously published pediatric cases, as it detects abnormalities at an earlier stage compared to the X-ray. In our patient, it revealed abnormalities before the development of apnoeic episodes and need for supplemental oxygen, abnormalities that were undetectable in the plain radiograph, and it is the method currently used in the triage of adult patients with suspected coronavirus disease 2019 (COVID-19).<sup>3</sup> We did not find evidence of the gastrointestinal symptoms described in other cases.<sup>4</sup>

Further research is required to establish the lung ultrasound features found in patients with COVID-19 and the course of the disease in the neonatal population, and any household members with mild cold symptoms should be tested to prevent transmission in this age group. In the context of the current pandemic, it is important to include the RT-PCR test for detection of SARS-CoV-2 infection in the assessment of the febrile neonate, as indicated by current protocols,<sup>5</sup> taking into account the role of the viral load in this age group as it is done in adults.<sup>6</sup>

## References

- Hong H, Wang Y, Chung HT, Chen CJ. Clinical characteristics of novel coronavirus disease 2019 (COVID-19) in newborns, infants and children. *Pediatr Neonatol.* 2020;61:131–2.
- Alonso C, López M, Moral MT, Flores B, Pallás C. Primer caso de infección neonatal por SARS-CoV-2 en España. *An Pediatr (Barc).* 2020. <http://dx.doi.org/10.1016/j.anpedi.2020.03.002>.
- Buonsenso D, Piano A, Raffaelli F, Bonadia N, de Gaetano Donati K, Franceschi F. Point-of-Care Lung Ultrasound findings in novel coronavirus disease-19 pneumoniae: a case report and potential applications during COVID-19 outbreak. *Eur Rev Med Pharmacol Sci.* 2020;24:2776–80.
- Wang J, Wang D, Chen GC, Tao XW, Zeng LK. SARS-CoV-2 infection with gastrointestinal symptoms as the first manifestation in a neonate [Article in Chinese]. *Zhongguo Dang Dai Er Ke Za Zhi.* 2020;22:211–4.
- Recomendaciones para el manejo del recién nacido en relación con la infección por SARS-CoV-2. Sociedad española de neonatología. Available from: <https://www.seneo.es/images/site/noticias/home/Recomendaciones.SENeo.SARS-CoV-2Version.50.pdf> [cited 6 April 2020].
- Lu Q, Shi Y. Coronavirus disease (COVID-19) and neonate: what neonatologist need to know. *J Med Virol.* 2020;92:564–7.

Ana Pineda Caplliure<sup>a,b</sup>, Manuel Porcar Almela<sup>a,b,\*</sup>,  
Andrea Navarro Albert<sup>a</sup>, Elvira Muñoz Vicente<sup>a</sup>,  
Beatriz Mansilla Roig<sup>a</sup>

<sup>a</sup> *Servicio de Pediatría, Hospital Universitario Doctor Peset, Valencia, Spain*

<sup>b</sup> *Departamento de Pediatría, Obstetricia y Ginecología, Universidad de Valencia, Valencia, Spain*

\* Corresponding author.

E-mail address: [dr.porcaralmela@gmail.com](mailto:dr.porcaralmela@gmail.com)  
(M. Porcar Almela).

<https://doi.org/10.1016/j.anpede.2021.04.001>  
2341-2879/ © 2021 Published by Elsevier España, S.L.U. on behalf of Asociación Española de Pediatría. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Description and assessment of medical student rotation in Primary Care Paediatrics<sup>☆</sup>



### Descripción y evaluación de la rotación de estudiantes de Medicina por Pediatría de Atención Primaria

Dear Editor:

The paediatrics curriculum of medicine students must include knowledge and management of the problems most commonly found in children (95% of childhood diseases,

which are managed in the primary care [PC] setting) in addition to complex diseases (5%–10% of child diseases, which require hospital-based care). However, in most schools of medicine in Spain, the paediatrics curriculum focuses on hospital-based care. In 2014, the Department of Paediatrics of the Universidad Complutense of Madrid hired PC paediatricians as associate professors to lecture and serve as tutors for students in the PC rotations.

We conducted a retrospective descriptive study to analyse the characteristics and outcomes of practical training in PC paediatrics and assess the perceptions of students training in the Hospital General Universitario Gregorio Marañón of Madrid by means of an anonymous questionnaire.

Medical students do the 6-to-8-week paediatrics rotation in year 5 or 6 of their training after choosing 2 fields among the different hospital-based paediatric specialities and PC. At the end of the rotation, they submit a portfolio including a written review of the rotation and a self-evaluation, and are asked to fill out a questionnaire on a voluntary basis asking about organizational and teaching aspects and offering room to write any comments and suggestions on areas that could be improved.

<sup>☆</sup> Please cite this article as: Aparicio Rodrigo M, Martínez González C, García-Onieva Artazcoz M, Hernández Cobeño Á, López-Herce Cid J. Descripción y evaluación de la rotación de estudiantes de Medicina por Pediatría de Atención Primaria. *An Pediatr (Barc).* 2021;94:413–415.

**Table 1** Results in the section of teaching activities of the anonymous questionnaire.

Teaching activities	10	9	Mean rating $\pm$ SD
Quality of teaching	30	3	9.90 $\pm$ 0.29
Clinical activities	30	3	9.90 $\pm$ 0.29
Student supervision	31	2	9.94 $\pm$ 0.24
Mini-clinical evaluation exercise	33		10 $\pm$ 0
Feedback on portfolio	32	1	9.97 $\pm$ 0.17
Humane treatment	33		10 $\pm$ 0
Overall usefulness of rotation in the training of the student	33		10 $\pm$ 0
Quality of training	30	3	9.90 $\pm$ 0.29

SD, standard deviation.

**Table 2** Most frequent comments made by students.

Very good/excellent/the best/one of the best rotations in the educational programme
Learning of fundamental aspects of paediatrics /history-taking, physical examination and management of the child
Training on the healthy child
Training on the most common childhood diseases
Training on communication with patients and families and physician-patient rapport. Empathy
Biopsychosocial perspective of disease
Training on health education, prevention and promotion
Teamwork
Excellent treatment of students/felt very comfortable
The educational needs and personal wellbeing of the student were taken into account
Connection of theory with everyday clinical practice
The role of the student was well defined. The most comprehensive and organised rotation
Feeling that the student had a meaningful role (as opposed to feeling useless in other rotations in which the students felt like mere observers)
Autonomy with supervision
Active participation of students

In the academic years spanning from 2015 to 2018, 104 medical students of the Universidad Complutense of Madrid, affiliated to the Hospital Gregorio Marañón, did a rotation in PC paediatrics. All of them submitted the written review of the rotation, of which we were able to include 81 (78%) in the analysis, and 33 (30%) filled out the anonymous questionnaire. Students gave the training a score of  $9.95 \pm 0.05$  (Table 1) and organizational aspects a score of 10 on a scale of 10. Table 2 presents the most common comments found in the analysis of the rotation reviews. The most frequent suggestions for improvement were prolonging the PC rotation and making the PC rotation mandatory.

In 1999, the American Association of Pediatrics proposed 50% of the paediatrics rotation be spent in the ambulatory care setting.<sup>1</sup> In spite of this, training in PC paediatrics has yet to be generalised.

Several studies have assessed the outcomes of PC paediatrics rotations.<sup>2-4</sup> These studies found that students perceived these rotations very positively, as they considered them among the most valuable in their training. Our findings are consistent with this, as students reported considerable satisfaction with both the organization and the quality of the training. Students highlighted the acquisition of knowledge and skills in the management of healthy children, the history-taking and physical examination in the assessment the most common diseases, the biopsychosocial approach to disease management, health promotion and prevention activities, communication with patients and families, team-

work, autonomy and active participation. They also praised how students were treated.

Some studies have also assessed the performance of students following the rotation,<sup>5,6</sup> and while no difference was found in the performance of the objective structured clinical examination (OSCE),<sup>5</sup> the assessment of the management of the most frequent complaints in the paediatric population did find differences.<sup>6</sup> Furthermore, these studies reported that students that did a PC rotation saw 4 times as many patients that also presented with more frequent paediatric complaints compared to students that did rotations in the hospital setting.<sup>5</sup>

There are several limitations to our study. The study was performed in a single university hospital, and the response rate was relatively low, although we were able to analyse the rotation reviews submitted by a substantial percentage of the students, which we therefore believe reflect the perceptions of students accurately. In addition, our study did not allow us to determine whether higher student satisfaction correlated to better learning outcomes and translated to better care delivery in future clinical practice.

In conclusion, medical students had a very positive perception of the PC paediatrics rotation. They considered that they had learned essential aspects of the management of children, families and the most common childhood diseases in addition to non-essential technical aspects. Training in ambulatory settings complements training in the hospital setting, and both are necessary to obtain a comprehensive

education in paediatrics. The rotation in PC allows students to acquire basic clinical skills while working with real-world patients, which are harder to acquire in the hospital setting, and get training in areas such as health prevention and promotion or the biopsychosocial approach to disease.

We believe that the rotation in PC paediatrics should be mandatory in the curriculum of every medical school in Spain and integrated with hospital-based rotations with specific goals. To this end, it is advisable that PC paediatricians be included in the teaching staff of university paediatrics departments. Our experience may provide a model for the development of the PC paediatrics rotation.

## References

1. Scheiner AP. Guidelines for medical student education in community-based pediatric offices. American Academy of Pediatrics Council on Pediatric Education Subcommittee on Medical Student Curriculum. *Pediatrics*. 1994;93:956–9.
  2. Pipas CF, Peltier DA, Fall LH, Olson AL, Mahoney JF, Skochelak SE, et al. Collaborating to integrate curriculum in primary care medical education: successes and challenges from three US medical schools. *Fam Med*. 2004;36:S126–132.
  3. Elnicki DM, Kolarik R, Bardella I. Third-year medical students' perceptions of effective teaching behaviors in a multidisciplinary ambulatory clerkship. *Acad Med*. 2003;78:815–9.
  4. Turkeshi E, Michels NR, Hendrickx K, Remmen R. Impact of family medicine clerkships in undergraduate medical education: a systematic review. *BMJ Open*. 2015;5:e008265.
  5. Satran L, Harris IB, Allen S, Anderson DC, Poland GA, Miller WL. Hospital-based versus community-based clinical education: comparing performances and course evaluations by students in their second-year pediatrics rotation. *Acad Med*. 1993;68:380–2.
  6. Behmanesh F, Ahanchian H, Vakili R, Ahanchian N, Bagheri S. Teaching final-year medical students in a paediatric ambulatory care unit. *Clin Teach*. 2014;11:361–4.
- Maria Aparicio Rodrigo<sup>a,b,\*</sup>
- <sup>a</sup> *Unidad de Pediatría, Departamento de Salud Pública y Materno-infantil, Universidad Complutense de Madrid, Madrid, Spain*
- <sup>b</sup> *Pediatría de Atención Primaria, Centro de salud Entrevías, Servicio Madrileño de salud, Madrid, Spain*
- Carmen Martínez González<sup>a,b</sup>
- <sup>a</sup> *Unidad de Pediatría, Departamento de Salud Pública y Materno-infantil, Universidad Complutense de Madrid, Madrid, Spain*
- <sup>b</sup> *Pediatría de Atención Primaria, Centro de salud Villablanca, Servicio Madrileño de salud, Madrid, Spain*
- María García-Onieva Artazcoz
- Pediatría de Atención Primaria, Centro de salud Entrevías, Servicio Madrileño de salud, Madrid, Spain*
- Ángeles Hernáez Cobeño
- Centro de salud Valdebernardo, Servicio Madrileño de Salud, Madrid, Spain*
- Jesús López-Herce Cid<sup>a,b</sup>
- <sup>a</sup> *Unidad de Pediatría, Departamento de Salud Pública y Materno-infantil, Universidad Complutense de Madrid, Madrid, Spain*
- <sup>b</sup> *Servicio de Cuidados Intensivos Pediátricos, Hospital General Universitario Gregorio Marañón, Madrid, Spain*

\* Corresponding author.

E-mail address: [marapa04@ucm.es](mailto:marapa04@ucm.es) (M. Aparicio Rodrigo).

<https://doi.org/10.1016/j.anpede.2020.05.009>  
2341-2879/ © 2021 Published by Elsevier España, S.L.U. on behalf of Asociación Española de Pediatría. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Encephalopathy, kidney failure and retinopathy. CoQ10 deficiency due to COQ8B mutation\*



## Encefalopatía, fallo renal y retinopatía. Déficit de CoQ10 por mutación de COQ8B

Dear Editor:

Coenzyme Q10 (CoQ10) plays a crucial role in several cellular processes, such as energy production through the mitochondrial respiratory chain,  $\beta$ -oxidation of fatty acids and pyrimidine biosynthesis, and it is also one of the main cellular antioxidants. Its synthesis requires multiple enzymes encoded by different genes (*PDS1*, *PDS2*,

*COQ2*, *COQ4*, *COQ6*, *COQ8A*, *COQ8B* and *COQ9*). Due to the ubiquity of CoQ10 and the fact that the tissue expression of enzymes needed for its synthesis is variable, the clinical spectrum of CoQ10 deficiency is very heterogeneous, with the disorder potentially manifesting with myopathy, psychomotor retardation (PMR), encephalopathy, cerebellar ataxia, retinopathy, pulmonary hypertension, cardiomyopathy, steroid-resistant nephrotic syndrome (SRNS) and chronic kidney disease (CKD), depending on the involved gene.<sup>1</sup>

We present the case of a boy aged 6 years with a past history of febrile seizures and PMR of unknown aetiology admitted to hospital with hypertensive encephalopathy (blood pressure, 240/170 mmHg). The parents reported the child had experienced asthenia, polyuria, polydipsia and foamy urine lasting 6 months and palpebral oedema in the past few days. A head computed tomography (CT) scan was performed, with normal findings. The evaluation revealed the presence of microscopic haematuria, nephrotic-range proteinuria (urine protein/creatinine ratio, 23 mg/mg; normal range <0.2) and kidney failure with an estimated glomerular filtration rate of 4 mL/min/1.73 m<sup>2</sup> (KDIGO 2012 stage 3). The ultrasound scan revealed a small renal size for age, loss of corticomedullary differentiation and increased echogenicity, findings suggestive of long-term renal dis-

\* Please cite this article as: AdánLanceta V, Romero Salas Y, Justa Roldán ML, García Jiménez MC, Ariceta Iraola G. Encefalopatía, fallo renal y retinopatía. Déficit de CoQ10 por mutación de COQ8B. *An Pediatr (Barc)*. 2021;94:415–417.