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# Polysomnographic findings and cyclic alternating pattern analysis in children affected by primary monosymptomatic nocturnal enuresis (PMNE)

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**Objective:** Primary monosymptomatic nocturnal enuresis (PMNE) is a common problem in childhood worldwide, consisting in an "involuntary voiding of urine during the night, in the absence of congenital or acquired defects of the central nervous system or the urinary tract, in a child aged five years or over". Presently the pathophysiogenetic mechanism seems not fully understood, and there is disagreement about the sleep quality of affected children.

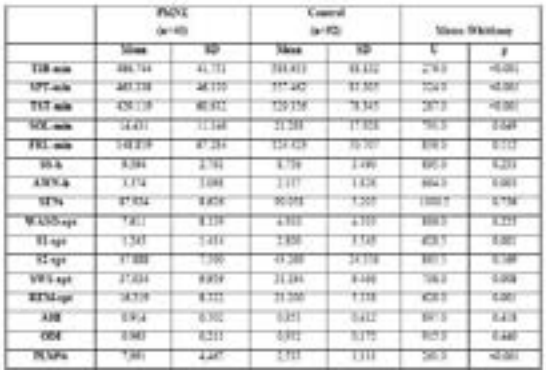
Aim of study is assessing the sleep macrostructure and the NREM sleep instability (CAP analysis) among a sample of enuretic children.

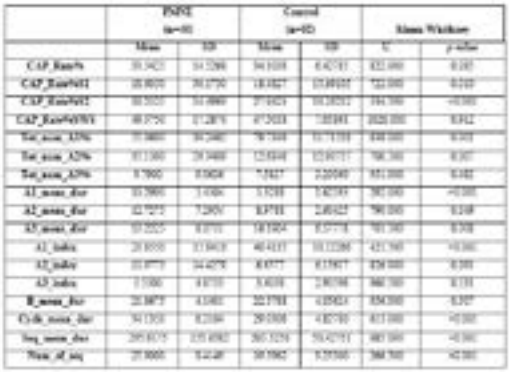
**Methods:** 40 PMNE children (22 Males) (mean age 9,082; SD ± 2,28) underwent an overnight polysomnographic study and were compared with 52 healthy children overlapping for age and gender.

**Results:** PMNES children present a reduction in sleep duration parameters ($p<0.001$), and in REM% ($p<0.001$) and S1% ($p=0.01$) and an increased in SWS% ($p=0.005$) than controls (Table 1).

Among the CAP sleep parameters, the bedwetting group show differences in A1 and A2 representation (Table 2).

**Conclusion:** The present study could open a new window in the management of PMNE, suggesting to consider it properly a neurologic disease in the next future. The Table 1 shows the differences among children affected by primary monosymptomatic nocturnal enuresis (PMNE) and control group in the following parameters: TIB, Time in bed; SPT, Sleep period time; TST, Total sleep time; SOL, Sleep onset latency; SS/h, Stage shifts per hour; AWN/h, Awakenings per hour; SE, Sleep efficiency; WASO, Wakefulness after sleep onset; S1 and S2, Sleep stages 1 and 2; SWS, Slow-wave sleep; REM, Rapid eye movement sleep; AHI, Apnea/Hypopnea Index; ODI, Oxygen Desaturation Index; PLM, Periodic Limb Movements. p values <0.05 were considered as significant.The Table 2 shows the mean differences among children affected by primary monosymptomatic nocturnal enuresis (PMNE) and control group in the following parameters: CAP refers to cyclic alternating pattern; CAP rate (percentage of total NREM sleep time occupied by CAP sequences); percentage and duration of each A phase subtype; A1 index (number of phases A1 per hour of NREM sleep, and of S1, S2 and SWS sleep stage); A2 index (number of phases A2 per hour of NREM sleep, and of S1, S2 and SWS sleep stage); A3 index (number of phases A3 per hour of NREM sleep, and of S1, S2 and SWS sleep stage); duration of B phases; number and duration of CAP sequences. p values <0.05 were considered as significant.





## Biography

Michele Roccella is Associate Professor of Child Psychiatry at the Department of Psychology, Educational Science and Human Movement, University of Palermo, Italy . He graduated in Medicine and Surgery and Specialization in Child Psychiatry at the University of Palermo. He is currently Director of the School of Specialization in Child Neuropsychiatry at the University of Palermo. He was Medical Director of the level at the Territorial Service of Mental Health USL 3 of Catania, District of Palagonia. He is the author of over 450 publications on national and international journals and has been awarded several prizes. The study of impairment in neuropsychological functioning in patients with epilepsy syndromes-chromosome genetic and headache in childhood is one of its main areas of clinical interest and research.

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