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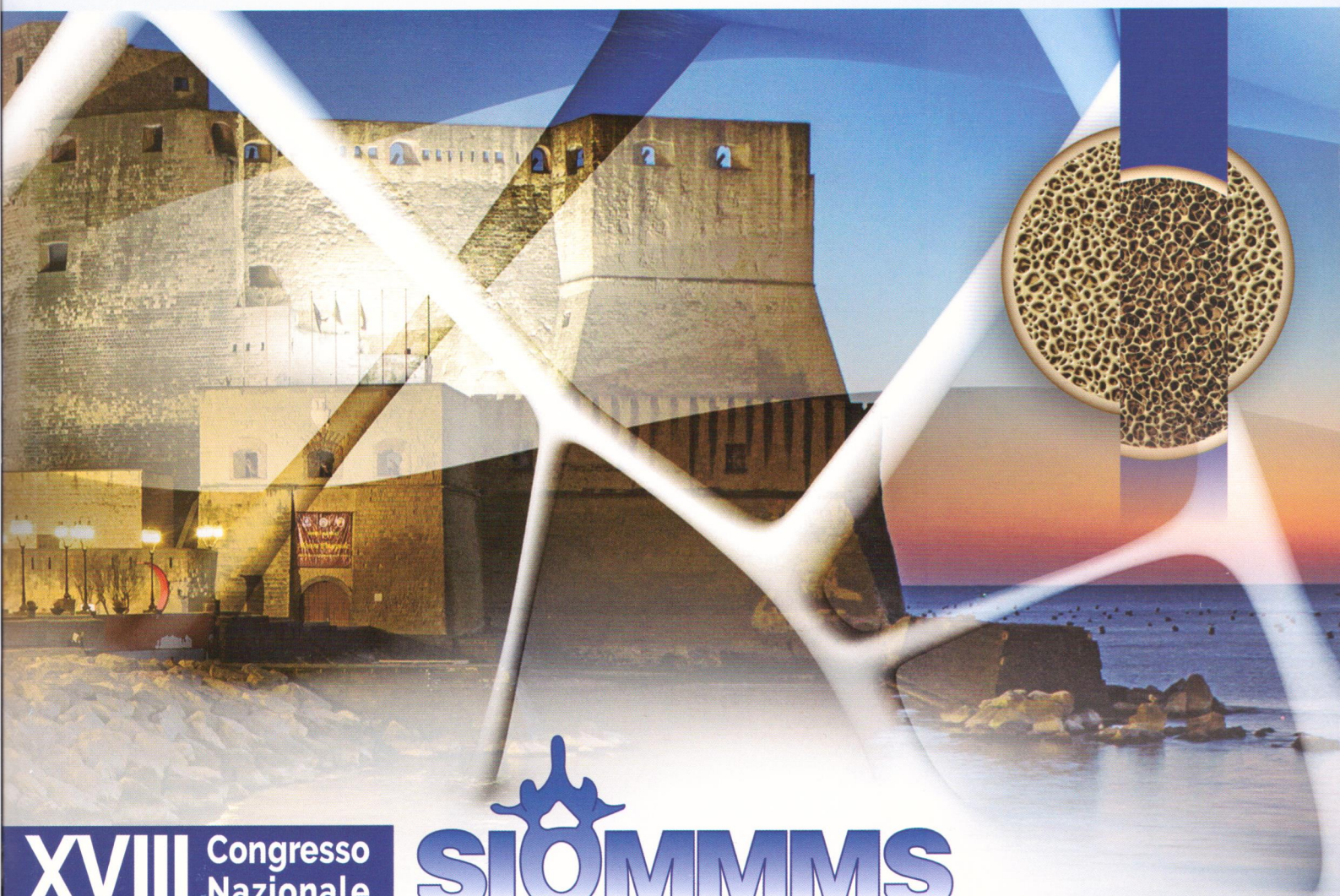

XVIII Congresso Nazionale

SIOMMMS

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C05 - Reliability of serum calcium to phosphorus (CA/P) ratio as an accurate and inexpensive tool to define disorders of CA/P metabolism

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Objective
The serum calcium/phosphorus (Ca/P) ratio is an accurate tool to differentiate patients with primary hyperthyroidism (PHPT) from healthy subjects1. However, other disorders of the Ca-P metabolism might also impair the Ca/P ratio, such as hypophosphoremia (HypoP) not PHPT-related. The aim of this study is to validate the accuracy of Ca/P ratio in the diagnosis of Ca-P metabolism disorders, including also patients with documented HypoP not due to PHPT.

Methods
Single-center, retrospective, case-control study, including 150 patients with documented PHPT and 306 patients with HypoP, compared with 150 controls. HypoP patients were enrolled among HIV-infected patients by selecting those with Fanconi-like syndrome due to antiretroviral treatment. Main outcomes: serum Ca, P, parathyroid hormone (PTH), 25-OH vitamin D, albumin and creatinine.

Results
The Ca/P ratio was significantly higher in PHPT and HypoP patients, compared to controls ($p<0.0001$). At receiver operator characteristics (ROC) curves analysis, the cut-off of 3.56 for Ca/P ratio was able to identify patients with PHPT and HypoP (sensitivity 95%; specificity 93%). Among patients with Ca/P ratio above 3.56, the thresholds of 10.3 mg/dL for serum Ca (sensitivity 93%; specificity 98%) and of 80.5 pg/mL for PTH (sensitivity 91%; specificity 91%) were defined for the specific diagnosis of PHPT.

Conclusions
The serum Ca/P ratio above 3.56 is a highly accurate tool to identify patients with Ca-P metabolism disorder. Thanks to its extraordinary simplicity, this index can be proposed as a screening and first-line examination in the diagnostic work-up when a disorder of Ca-P metabolism is suspected or should be ruled out. Reference1Madeo et al, Serum Calcium to Phosphorous (Ca/P) Ratio Is a Simple, Inexpensive and Accurate Tool in the Diagnosis of Primary Hyperparathyroidism. JRBM Plus, 2017. DOI: 10.1002/jbm4.10019