



Variation in plasma calcium analysis in primary care in Sweden--a multilevel analysis.

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Abstract: BACKGROUND: Primary hyperparathyroidism (pHPT) is a common disease that often remains undetected and causes severe disturbance especially in postmenopausal women. Therefore, national recommendations promoting early pHPT detection by plasma calcium (P-Ca) have been issued in Sweden. In this study we aimed to investigate variation of P-Ca analysis between physicians and health care centres (HCCs) in primary care in county of Skaraborg, Sweden. METHODS: In this cross sectional study of patients' records during 2005 we analysed records from 154 629 patients attending 457 physicians at 24 HCCs. We used multilevel logistic regression analysis (MLRA) and adjusted for patient, physician and HCC characteristics. Differences were expressed as median odds ratio (MOR). RESULTS: There was a substantial variation in number of P-Ca analyses between both HCCs (MOR_{HCC} 1.65 [1.44-2.07]) and physicians (MOR_{physician} 1.95 [1.85-2.08]). The odds for a P-Ca analysis were lower for male patients (OR 0.80 [0.77-0.83]) and increased with the number of diagnoses (OR 25.8 [23.5-28.5]). Sex of the physician had no influence on P-Ca test ordering (OR 0.93 [0.78-1.09]). Physicians under education ordered most P-Ca analyses (OR 1.69 [1.35-2.24]) and locum least (OR 0.73 [0.57-0.94]). More of the variance was attributed to the physician level than the HCC level. Different mix of patients did not explain this variance between physicians. Theoretically, if a patient were able to change both GP and HCC, the odds of a P-Ca analysis would in median increase by 2.45. Including characteristics of the patients, physicians and HCCs in the MLRA model did not explain the variance. CONCLUSIONS: The physician level was more important than the HCC level for the variation in P-Ca analysis, but further exploration of unidentified contextual factors is crucial for future monitoring of practice variation.

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