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Capnocytophaga Detection at Species Level During Pregnancy Using MALDI-TOF MS

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Objectives Although the genus oral *Capnocytophaga* may increase their proportional growth in relation to hormonal changes and can lead to serious inflammations and adverse effects during pregnancy, the prevalence of those organisms among pregnant women is not thoroughly examined. This study aimed to determine the distribution of human *Capnocytophaga* at the species level using MALDI-TOF MS.
Methods Subgingival *Capnocytophaga* isolates originated from 28 generally healthy and periodontitis-free pregnant women who were clinically three times during the pregnancy and two times after delivery. All isolates were preliminarily identified at the genus level based on phenotypic tests, then further examined with MALDI-TOF MS (Bruker Daltonics, Bremen, Germany) using the Microflex LT instrument and MALDI Biotyper software version 3.1. The specific cut-off scores were used to determine the genus level (1.700-1.999) and species level (≥2.000) identification.
Results Out of 780 isolates, 351 (83.18%) were identified at the species level. The highest peak of the *Capnocytophaga* populations was at the second trimester (98 isolates), where MALDI-TOF MS identified 86.7% of them at the species level. *C. ochracea* was the most identified species in all five visits (76%), followed by *C. sputigena* (5%), C. *haemolytica* (2%) and C. *granulosa* (1%).
Conclusions With the assistance of MALDI-TOF MS, the prevalence and distribution of *Capnocytophaga* species can be detected easily during pregnancy. C. *ochracea* in subgingival plaque was a common finding during pregnancy.