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PLASMA/SALIVA AND GENOTYPIC/PHENOTYPIC DIFFERENCES OF NICOTINE METABOLITE RATIO.

G Puppo[1], F Pistelli[1], S Fogli[2], M Del Re[2], M Lazzeretti[1], F Aquilini[1], R Danesi[2], L Carrozzi[1], A Palla[1]

[1]UO Pneumologia Universitaria - Azienda Ospedaliero-Universitaria Pisana, Pisa, Italy
[2]UO Farmacologia Clinica - Azienda Ospedaliero-Universitaria Pisana, Pisa, Italy

Aim : To assess differences in Nicotine Metabolite Ratio (3hydroxycotinine (3HC)/cotinine (COT), NMR) between plasma and saliva or genotype and phenotype.

Methods : NMR was measured both in plasma and saliva by mass-spectrometer method in 161 smokers attending a smoking cessation center. PCR analysis for genotyping CYP2A6 was performed. Smokers were stratified in „fast-“ (≥0.31) (FM) or „slow-metaboliser“ (<0.31) (SM) according to their NMR in plasma or saliva; those with or without the locus-specific CYP2A6*9 variant allelic (c.-48T>G) were classified as SM or FM, respectively.

Results : mean COT, 3HC, and NMR were: 227.1, 75.2 ng/mL and 0.02 in plasma; 263.4, 128.5 ng/mL and 0.01 in saliva. A significant correlation between metabolites in plasma and saliva was found (r2 0.76 for COT, 0.63 for 3HC, and 0.69 for NMR). There were 122/161 (75%) smokers with concordant NMR plasma/saliva measurements, 88/141 (62%) with concordant NMR genotype/salivary phenotype status, and 78/147 (53%) with concordant NMR genotype/plasmatic phenotype status. No differences in age, sex, number of cig./day, pack-years, FTND score or expired CO were found between concordant and non-concordant smokers with regard to their NMR classification.

Conclusions : There was a strong correlation between plasma/saliva COT, 3HC and NMR values; however, a not negligible proportion of non-concordant measurements was observed for plasma/saliva or genotypic/phenotypic NMR status. No determinants were identified between concordant and non-concordant smokers. Further analyses are needed to assess possible role of other allelic variants or confounders (e.g. comorbidities, drug interaction) or a different cut-off for NMR definition.

Session:
Novel findings in biomarkers of tobacco use, exposure, hazards and genetics (Oral presentation)
Date/Time:
Tuesday, September 18, 2018 / 10:45-12:45
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