**RESULTS**

- Globally mean urinary 1OHflaph+1OHAce and 1OHpy levels were slightly higher in exposed (1.92 ± 2.44 μmol/mol creatinine; 0.05 ± 0.05 μmol/mol creatinine) than in non exposed firefighters (0.78 ± 0.73 μmol/mol creatinine; 0.02 ± 0.01 μmol/mol creatinine), respectively. A great variability was found within the two groups.

- 3OHHp was not detected in the non-exposed urines. Some studies described that metabolites with five or more aromatic rings are mainly excreted in feces via bile rather than in urine (Likhachev et al. 1992; Torba and Hayakawa 2007).

- Total OH-PAH concentrations ranged between 0.15 to 2.30 μmol/mol creatinine for non exposed and from 0.02 to 7.80 μmol/mol creatinine for those firefighters who participated in fighting fire activities.

- Overall, 1OHlapt and 1OHAce were the most abundant OH-PAHs in fremen urines samples, accounting with more than 90% for total OH-PAHs. No international guidelines are established for any OH-PAH metabolite. However Jongeeneelen (2001) proposed a no occupational exposure limit for urinary 1OHpy (0.24 μmol/mol creatinine) and more recently the author recommended a guideline of 0.1 μmol/mol creatinine for occupational exposure (Jongeeneelen 2014).

- Regarding 1OHpy it was observed that among the evaluated Portuguese firefighters those proposed limits were not exceeded.

- When the total OH-PAHs are considered it was found that firefighters not exposed to fires presented mean concentrations below the non-exposed, still some firefighters exceeded that level, reaching a maximum of 2.30 μmol/mol creatinine for 1OHpy.

- Concerning firefighters actively exposed to fires, mean concentrations of total OH-PAHs surpassed the occupational exposure guideline proposed by Jongeeneelen (2014) for 1OHpy.

**CONCLUSIONS**

- For future work a higher number of both non exposed and exposed wildland firefighters should be considered.

- The quantification of other urinary OH-PAHs should be used in order to better characterize the firefighters occupational exposure.

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