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BACKGROUND

Concern about potential deleterious effects of pharmaceuticals in the environment is rapidly growing worldwide. The recently approved European “Green Deal” has turned attention on pharmaceuticals as environmental pollutants. The European Commission’s “Strategic Approach to Pharmaceuticals in the Environment” reflects about the importance of effluents from potential hotspots like hospitals and potential additional treatment to this wastewater. In the same line, the European Association of Hospital Pharmacists (EAHP) published a statement, highlighting the “need for measures to better address pharmaceutical contamination” and, “the development of interdisciplinary education, and training programs for healthcare professionals with urgency”. However, we believe that so far, this issue has not been sufficiently considered by healthcare professionals in general and hospital pharmacists in particular.

AIMS AND OBJECTIVES

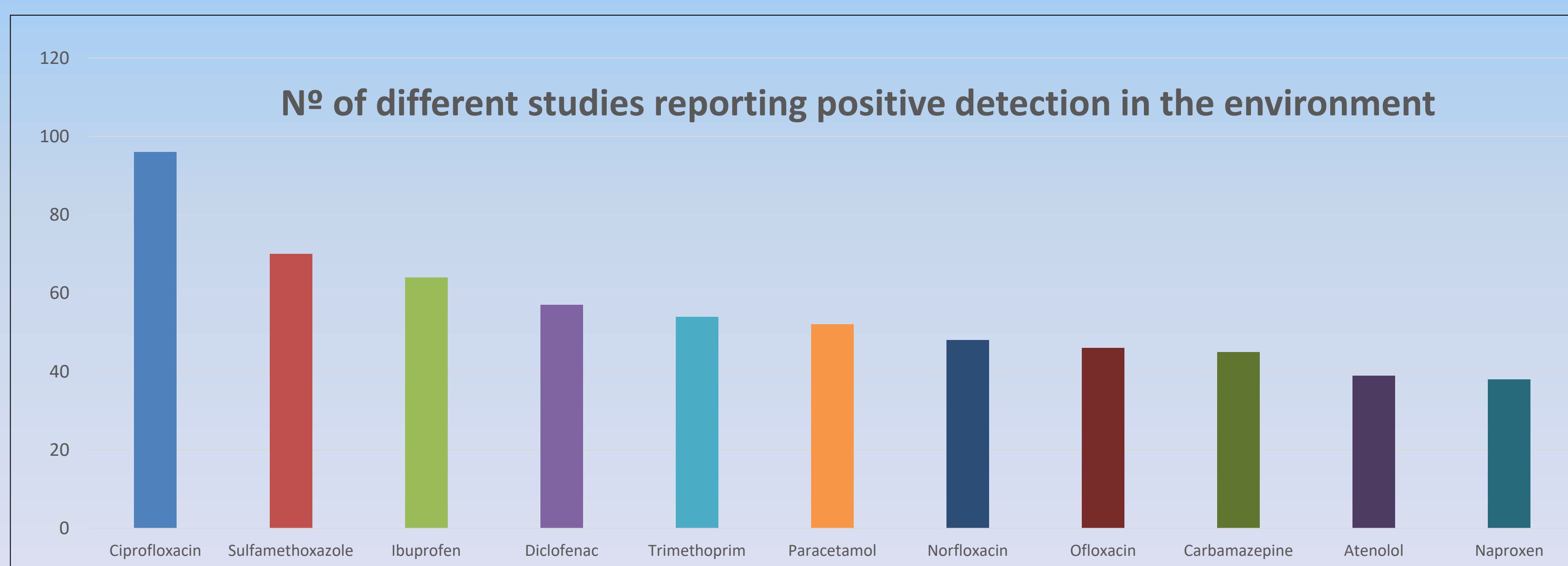
We aimed to review published data about the presence of pharmaceuticals in hospital wastewater worldwide, in order to raise awareness among hospital pharmacists about the matter.

MATERIAL AND METHODS

To that end, we used the Pharmaceutical Database published by the German Environment Agency – Umweltbundesamt, which collects all published information about the presence of pharmaceuticals, including wastewater from hospitals. The database was downloaded on September 13, 2021. “Sewage hospital (untreated)” & “Sewage hospital (treated)” matrices were considered. Metabolites were excluded.

RESULTS

A total of 67 publications were found reporting positive detection of 221 different parent drugs in hospital wastewater. These studies were carried out in 27 different countries of which 15 were European with, Portugal, Italy, Switzerland and Norway being the ones with more published data. An additional treatment to hospital wastewater was reported in 11 different countries, 6 of which were European. The three most frequently detected drugs were ciprofloxacin, sulfamethoxazole and ibuprofen.



CONCLUSIONS

A considerable amount of research about the presence of pharmaceuticals in hospital wastewater has been performed, mainly in European countries. We hope our research helps raising concern in hospital pharmacist about this issue.

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