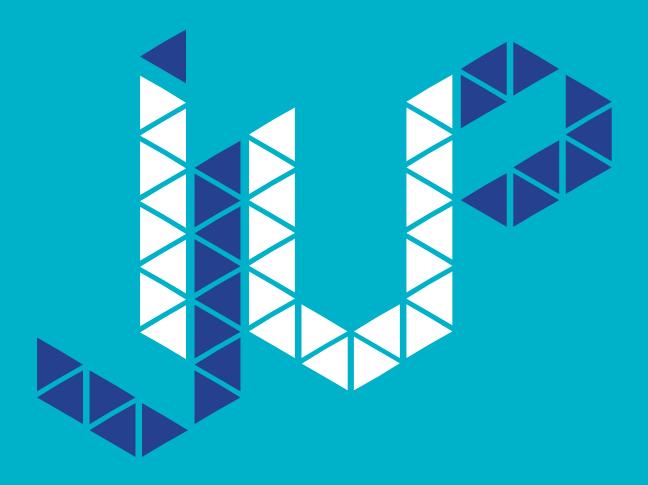# BOOK OF ABSTRACTS

8TH MEETING OF YOUNG RESEARCHERS
OF UNIVERSITY OF PORTO

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Clonal dissemination of clinically relevant multidrug-resistant *Salmonella* Typhimurium, *S.* 4,[5],12:i:- and *S.* Rissen in Portugal

Sara Marçal[1], Joana Campos[2], Joana Mourão[2], Jorge Machado[3], Carla Novais[2], Luísa Peixe[2], Patrícia Antunes[1,2]

[1]Faculdade de Ciências da Nutrição e Alimentação, Universidade do Porto, Portugal; [2]UCIBIO/REQUIMTE. Departamento de Ciências Biológicas. Laboratório de Microbiologia, Faculdade de Farmácia, Universidade do Porto, Portugal; [3]Departamento de Doenças Infeciosas, Instituto Nacional de Saúde Dr. Ricardo Jorge, Lisboa, Portugal.

Non-typhoidal *Salmonella* infections represents a global public health burden, being crucial to identify and follow clones of clinically relevant serotypes to contain its spread. Our goal was to assess clonal distribution trends in three clinically relevant *Salmonella* serotypes and their association with antimicrobial resistance in Portuguese isolates. Results were also compared with previous data from the last decade (2002-2009).

Isolates of *S.*Typhimurium/n=253, *S.*4,[5],12:i:-/n=158 and *S.*Rissen/n=26 from different sources (clinical/food/animal) and regions (2009-2014) were screened by PCR for sulfamethoxazole resistance genes (*sul1/sul2/sul3*) and genes linked with class 1 integrons (*intI1*/antibiotic resistance gene cassettes). Detection of other antibiotic resistance genes by PCR, resistance to 10 antibiotics [ampicillin-A/chloramphenicol-C/gentamicin-G/kanamycin/nalidixic-acid/ciprofloxacin/streptomycin-S/sulfametoxazol-Su/tetracycline-T/trimethoprim-Tr] and DDST by disk diffusion (CLSI/EUCAST) and clonal relatedness by PFGE were performed in representative isolates.

In *S.*Typhimurium we detected 3 predominant clones: i) "*S.*Tyhimurium DT104" (43%; *intI1; 5′CS-aadA2±5′CS-bla*PSE-1; *sul1±sul2; qacEΔ1*), with identical MDR profiles (mostly ACSSuT-*bla*PSE-1-*floR-aadA-sul1-tetG*) and PFGE-types to those described since 2002; ii) "S.Typhimurium European clone" (23%; *sul2* and absence of *intI1/sul1/qacEΔ1*) with the same or very closely related PFGE-types and MDR profiles (mostly ASSuT-*bla*TEM-*strA-strB-sul2-tetB*) as the "European clone" of *S.*4,[5],12:i:-; iii) "*S.*Tyhimurium OXA-30-producing" (17%; *intI1; 5′CS-bla*OXA-30; *sul1±sul2; qacEΔ1*), with the same MDR profile (mostly ACSSuT-*bla*OXA-30-*catA-aadA-sul1-tetB*) and PFGE-type circulating since 2002. In *S.*4,[5],12:i:- it was found the presence of the 3 clones currently circulating in Europe: i) "European clone" (75%; *sul2* and absence of *intI1/sul1*/qac*EΔ1;* mostly ASSuT-*bla*TEM-*strA-strB-sul2-tetB*), which has expanded throughout this study period; ii) "Spanish clone" [6%; *intI1*; *qacEΔ1+qacH;* mostly AC(G)SSuTTr-*bla*TEM-*cmlA-floR-(aac(3)-IV)-aadA-sul1-sul2-sul3-tetA-dfrA12*] and iii) "Southern-European clone" (1%; *intI1; qacH;* CSSuTTr-*cmlA-aadA-strA-strB-sul3-tetB-dfrA12*) mostly with similar MDR and/or PFGE-types described since 2002. In *S.*Rissen stands out the maintenance of the clone frequently associated with class 1 integrons [38%; *intI1*; 5′CS-*drfA12-aadA/5′CS-drfA1-aadA; sul1/sul3; qacEΔ1/qacH*] and MDR profiles [mostly A(C)SSuTTr-*bla*TEM-(*cmlA*)-*aadA-sul1-tetA-dfrA12*].

In the three *Salmonella* serotypes we observed the persistence of the MDR clones and corresponding PFGE-types more frequently identified in the last decade. It is of note the decreased frequency of *S.*4,[5],12:i:- "Spanish" and "Southern-European" clones and the expansion of a new clonal group with ASSuT profile among isolates of *S.*Typhimurium and *S.*4,[5],12:i:-. The follow-up of population dynamics and the understanding of factors promoting survival/persistence of *Salmonella* clones is crucial to improve effective strategies and interventions in food safety at global level.