

### **CR34: Penicillin prescribing in primary care in Portugal: a cluster-randomized controlled trial.**

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**Aim:** One important quality indicator of antibiotic prescribing is the relation between broad- and narrow-spectrum antibiotics. Accordingly, the aim of this study is to assess the impact of an educational intervention in penicillin prescribing in primary care in Portugal.

**Method:** We designed a cluster-randomized trial in the Centre Health Region of Portugal, with a sample size of ~1100 primary care physicians. The multidisciplinary and multifaceted intervention targeted attitudes and knowledge about antibiotic prescribing and resistances and included educational outreach visits, and, included also an intervention in community pharmacists and the distribution of educational materials to the patients. To measure the impact of the intervention on the quality of penicillin prescribing, we've assessed two quality indicators validated by ESAC group: (i) the prescription of  $\beta$ -lactamase sensitive penicillins (J01CE) expressed as percentage and (ii) the prescription of combination of penicillins including  $\beta$ -lactamase inhibitor (J01CR) expressed as percentage. The prescription was evaluated in number of packages *per* 1000 inhabitants *per* day. Intention-to-treat analysis was adopted and Linear mixed models were performed.

**Results:** The level of participation was high (64%; ~309 primary care physicians) in a total of 25 counties where the intervention was applied. Regarding the prescription of penicillins, a beta-lactamase sensitive penicillins increase was found (~8%; -0.26 to 16.42) simultaneously to a statistical significant decrease of the combination of penicillins including beta-lactamase inhibitors (~-5%; -8.26 to -2.82).

**Conclusion:** Multifaceted and multidisciplinary interventions, and focused in physicians' attitudes and knowledge can effectively improve the quality of penicillin prescribing, which is one of the main concerns regarding antibiotic use in primary care.

**Declaration of Interest:** No conflict of interest to declare.

References & Clinical Trial Registry Information