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ReferReumaPt sensitivity and specificity on identifying and diagnosing RDs - first results

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Introduction

EpiReumaPt is a national epidemiologic, cross-sectional study of rheumatic diseases (RDs) in the Portuguese population. EpiReumaPt involves two stepwise encounters. The first phase, a survey performed by CESOP-UCP interviewers at subjects' house (ReferReumaPt), and phase 2 which consists of a clinical observation performed by a Rheumatologist in a health center. Phase 1 main aims are to characterize Portuguese population and to identify potential RD patients, while phase 2's main aims are to confirm RD diagnosis using a blinded methodology and to apply validate questionnaires for specific RDs.

The aim of this work was to analyse ReferReumaPt questionnaire sensitivity and specificity on identifying and diagnosing DRs, evaluating the results for the first EpiReumaPt 3 months on the field.

Methods

ReferReumaPt was developed by the EpiReumaPt's research team. CESOP/UCP provided the informatics platform. The methodology used by interviewers for data collection was CAPI (computer assisted personal interview). The questionnaire consists of several distinct parts: Demographics data; Assessment of quality of life; Screening of DRs estimated to be more common in Portugal, according to international criteria validated (Low back pain; Rheumatoid Arthritis; Spondylarthritis; Osteoarthritis (hand, hip and knee); Fibromyalgia; Lupus; Gout; Polymyalgia Rheumatica; Periarticular pathology; Osteoporosis); General questions, which include among others: nationality, ethnicity, height, weight, marital status, alcohol and coffee consumption, smoking, physical activity and health care.

Positive screening algorithms were previously defined for each pathology by the identification of specific items. This information was included into the software and allows the interview to identify individuals with rheumatic complaints.

The clinical observation performed by a Rheumatologist was aimed to confirm the diagnosis of selected individuals. Medical diagnosis was used as the standard of comparison for the results obtained for the same participants in CESOP's survey. IA blinded methodology is used. Rheumatologists only are aware whether the screening is positive or negative. A software application was also designed to allow the standardization of data collected by Rheumatologist.

We compared the results obtained by ReferReumaPt with the Rheumatologist diagnosis (gold standard). Sensitivity, specificity, positive predict value (PPV+) and negative predict value (PVP-) were measured.

Results

To analyze sensitivity and specificity of the screening of those individuals examined by the Rheumatologist (n=255) we compared the CESOP's screening and the Rheumatologist diagnosis.   Regarding total screening, sensitivity was 0.99 (99%) and specificity was 0.19 (19%). The PPV+ was 0.74 (74%) and PPV- was 0.88 (88%).

The same process was repeated on some specific pathologies: rheumatoid arthritis - sensitivity was 0.75 (75%) and specificity was 0.39 (39%), the PPV+ was 0.02 (2%) and PPV- was 0.99 (99%); lupus - sensitivity was 1 (100%) and specificity was 0.83 (83%), the PPV+ was 0.04 (4%) and PPV- was 1 (100%); spondyloarthritis - sensitivity was 1 (100%) and specificity was 0.58 (58%), the PPV+ was 0.02 (2%) and PPV- was 1 (100%); fibromyalgia - sensitivity was 0.85 (85%) and specificity was 0.79 (79%), the PPV+ was 0.10 (10%) and PPV- was 0.99 (99%); osteoarthritis - sensitivity was 0.98 (98%) and specificity was 0.42 (42%), the PPV+ was 0.44 (44%) and PPV- was 0.97 (97%).

Conclusions

CESOP\229survey (ReferReumaPt) had high sensitivity regarding total screening, being able to detect positivity among subjects; however specificity was very low and warrants optimization.