CLUSTER PHENOTYPING AS AN APPROACH TO IDENTIFY COPD PATIENTS AT RISK OF POOR PROGNOSIS

Introduction

The Czech national COPD guidelines recognize 6 different COPD phenotypes: bronchitic, emphysematous, ACO (asthma/COPD overlap), cachexia, frequent exacerbator and BCO (Bronchitis/COPD overlap). The Czech multicenter research database of COPD (CMRD) is a prospective project focused on long-term mortality and on disease evolution in a real-life COPD patient cohort [1].

Aims of the study

Our aim was to assess differences in long-term all-cause mortality in the CMRD cohort with respect to the above mentioned phenotypes and their combinations.

Methods

A prospective, observational, non-interventional multicenter study

Inclusion criteria: diagnosis of COPD ≥12 months prior to enrollment, post-bronchodilator FEV1 <60% of predicted, patient’s written consent

Data from the CMRD cohort (comprising 784 COPD patients) were analyzed at 4-year follow-up [2].

Patient characteristics (cohort) – descriptive statistics

Mortality analysis – Kaplan-Meier survival estimates for each phenotype and their combinations.

Results

Emphysematous (p<0.005), cachetic (p<0.001) and frequent exacerbator (p<0.025) phenotypes were associated with increased all-cause mortality.

The co-presence of cachexia and emphysema or of the cluster of cachexia, frequent exacerbator and exacerbator phenotype was associated with increased risk of death (p<0.001).

No differences in mortality were found if the Spanish phenotypes (i.e., non-exacerbator, exacerbator/bronchitic, exacerbator/non-bronchitic and asthma/COPD overlap) were used.

Discussion

The GOLD 2011 [5] and GOLD 17’ disease classification process gradual prognostic value for COPD patients, categories A-D (higher long-term mortality in group D compared to group B) [3].

Phenotyping of COPD patients is recommended by several national guidelines for COPD disease management [4]. Various COPD phenotyping approaches were reported by a number of research groups [1,49,7], and further research is ongoing.

The main advantage of COPD phenotyping is the possibility of tailored treatment for specific COPD patient subpopulations. The Czech approach in COPD phenotyping is a unique alternative since it recognizes the possibility of a coexistence of multiple phenotypes in a single COPD patient [1].

Conclusion

Our results show that COPD phenotyping and cluster phenotyping – above the possibility of a tailored treatment – may also have a prognostic significance for identifying COPD subpopulations at high risk of poor outcome.

References

