LONG-TERM EFFECT OF HUMAN ALPHA1-PROTEINASE INHIBITOR THERAPY: RESULTS OF THE 5-YEAR FOLLOW-UP STUDY

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Objective:

Introduction

Alpha-1 antitrypsin deficiency is one of the most widespread genetic disorders. However, due to its autosomal codominant inheritance, clinical manifestations occur only in individuals who have two faulty alleles; the predominant variant with expression is PiZZ. *(1,2)* The most successful treatment today is replacement therapy with a human alpha1-proteinase inhibitor. *(3)* The purpose of this study was to evaluate the effect of the drug in patients who have the aforementioned disorder.

Methods

This is a retrospective, observational, noncomparative case study. The inclusion criteria for augmentation therapy are proven low levels of A1AT, a genetic variant of PiZZ, and progressive lung disease with FEV1 80% or lower. The outcome measure was to record the deterioration of pulmonary function. The progression of their disease has been continuously monitored by lung function tests (spirometry and CO diffusion) at least once every 6 months.

Results

Over the last 15 years, there have been 29 patients that were on therapy with a human alpha1-proteinase inhibitor. 22 of them are male (76%) and 7 female. The mean age at the time of diagnosis was 46,75 years and more than half (55%) are between 40 and 50 years old. The vast majority of patients (93%) are smokers (or ex-smokers) that have on average 23,56 pack years. Nearly all patients received their therapy in a two-week regimen. Out of 29 patients that have been on augmentation therapy, 19 were continuously monitored over at least 5 years. Over this 5-year period, we observed that those subjects who received treatment had no further significant deterioration in FVC, FEV1, or DLCO. Average FVC at the beginning was 64,5%, FEV1 35,26% and DLCO 42,63% while after 5 years these values were 60,63%, 30,42% and 41,72%, respectively. The differences between their first findings and those after 5 years were -4,68 for ΔFVC, -4,53 for ΔFEV1 and ΔDLCO is -1,95. None of the subjects had significant side effects that would require discontinuing the drug.

Conclusion

Given all the above, we can affirm that a human alpha1-proteinase inhibitor seems to be a safe drug that is effective in slowing the decline of pulmonary function and reducing the number of exacerbations.