The Change of Acoustic Parameters before and after Treatment in Laryngopharyngeal Reflux Patients

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Objectives/Background : Voice change is the one of the main problem of laryngopharyngeal reflux (LPR) patients, and various parameters was developed to evaluate the efficacy of treatment in LPR disease. The purpose of this study was to evaluate acoustic parameters of voice changes as an indicator of efficacy of treatment in LPR disease during treatment and to compare them with reflux symptom index (RSI) and reflux finding score (RFS).

Materials and Methods : From January to September 2005, 40 patients who was diagnosed with LPR by 24 hour ambulatory double pH monitoring were enrolled. 25 persons who were not related to LPR were used as control group. LPR patients were treated by proton pump inhibitor, and voice analysis was conducted 3 times at pretreatment, 1−2 months after treatment and 3−4 months after treatment. Maximal phonation time (MPT), jitter, shimmer and harmonic to noise ratio (HNR) were analysed as acoustic parameters. RSI and RFS was documented at pre- and posttreatment.

Results : LPR patients showed increased jitter and shimmer, MPT and decreased HNR compared to normal control group. Jitter, shimmer and HNR improved significantly at 1−2 months after treatment and maintained at 3−4 months after treatment. Jitter was significantly correlated with RSI ($P<0.05$).

Conclusion : Voice parameters can be used as indicators of diagnosis and efficacy of treatment in LPR patients.