Effectiveness of a telemedicine program in the quality of spirometries in primary care centres

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Introduction: Many studies have demonstrated a low quality of S in primary care, carrying wrong diagnosis and treatment. Spirometry (S) quality control can be difficult because it is not an easy test.

Aims: 1. To evaluate the effectiveness of Telemedicine Program to assure the S quality in Primary Care Centers (PCC). 2. To evaluate if there is agreement between functional diagnosis and clinical diagnosis.

Material/Methods: We included 15 PCC, with 2-3 nurses in each of them. We use a Telemedicine Program (Linkcare Spiro®). The quality of S was evaluated by the Functional Respiratory Laboratory according to standard guidelines and a report was given in high quality S. The quality was evaluated using a scale grade from D and F (poor quality) to A and B (excellent quality).

Results: During 9 months 1,894 S were collected. We observed an improvement in all PCC.

We have obtained clinical parameters in 640 patients. 321 with previous clinical diagnosis in PCC. 94/321 (29.3%) presented COPD diagnosis, with normal S in
Conclusions: 1. The Telemedicine Program improve the quality of S in all centers.
2. The Telemedicine Program is useful as a continues training program for nurses.
3. We observed disagreement in 25.5% of COPD diagnosis.

Flow-volume loops in central airway obstruction
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Introduction: Central airway obstruction (CAO) leads to significant morbidity and mortality. In the last 40 years flow-volume loops (FVL) have been used as a noninvasive method to evaluate this condition although bronchoscopy is the gold standard. Few studies were made to verify the sensitivity and specificity of FVL in detecting CAO, or to investigate the morphological and quantitative changes of the curve in relation to location, type and degree of obstruction.

Methods: Patients with an indication to perform bronchoscopy were selected consecutively. Bronchoscopy and FVL were carried out with a maximum interval of 7 days. Four experts, blinded to the quantitative data, were used to assess the morphology of FVL (suggestive or non-suggestive of CAO) and an independent element established the quantitative and morphological criteria (extra, intrathoracic variables and fixed).

Results: 82 patients were studied, 36 (44%) with CAO. The sensitivities and specificities in detecting CAO were, respectively: 91.3% and 88.9% for the quantitative criteria of FVL, 93.5% and 30.6% concerning the morphological criteria. In patients with CAO the most common quantitative criteria were FEF50/FIF50 ≥1, (83%) and FEV1/PEF ≥ 8 (96%). They correlated with localization, degree and type of obstruction.

Conclusions: The morphology of the FVL has a good sensitivity but low specificity in detecting CAO. Quantitative criteria of the FVL have a high sensitivity and specificity. In clinical practice one should always use an aggregation between the morphological and quantitative criteria, since it maintains sensitivity, improving specificity.

Survival analysis can help determine which TLco prediction equations to use for patient data
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Choosing which prediction equation to use for lung function data can be a problematic. In Europe the ECCS equations are commonly used but more recent ones are available and may be more applicable. To help decide which TLco prediction equation to use for lung function data can be a problematic. In Europe the ECCS equations are commonly used but more recent ones are available and may be more applicable. To help decide which TLco prediction equation to use for lung function data can be a problematic. In Europe the ECCS equations are commonly used but more recent ones are available and may be more applicable. To help decide which TLco prediction equation to use for lung function data can be a problematic. In Europe the ECCS equations are commonly used but more recent ones are available and may be more applicable.
Methods: We analysed data of 29 patients who underwent a lung transplant in the Erasmus Medical Center Rotterdam and had at least 2.5 years of lung function data after transplantation. We determined the number of days necessary to reach 95% of the highest post transplant VC (TimeVC).

Results: 15 males and 14 females, with ages at transplantation ranging from 31 to 63 years were studied. 19 underwent a bi- and 10 a unilateral lung transplantation. 22 were transplanted because of obstructive lung disease and 7 because of other reasons. Patients were obstructive if FEV1/VC < -1.64SD of the predicted values. Average TimeVC was 537 days (SD=281 days). In the obstructive group TimeVC was on average 470 days and in the non-obstructive group 750 days. We only found a significant regression coefficient (R=0.46, p=0.012) between TimeVC and pre transplantation FEV1/VC in SD of predicted.

Conclusion: In our study we found that a more severe obstruction before transplantation leads to an earlier reach of maximum VC after transplantation. An explanation might be that the pre transplant thorax in obstructive patients had been in a hyperinflated state, enabling the transplanted lungs to expand sooner.

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Reasons for referral for pulmonary function testing: An audit of four Australian adult lung function laboratories
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Pulmonary function (PF) testing provides a cornerstone for diagnosis and management of most respiratory conditions and accurate interpretation of test results is an important component of the final report. As part of developing a structured approach to interpretation of PF results we wished to characterise primary reasons for referral for testing in a range of PF laboratories.

Methods: Three public, university-affiliated PF labs and one private lab using similar PF databases participated. Reasons for performance of PF tests were extracted from the databases and collated for analysis. Over 5,000 consecutive tests were evaluated from each lab.

Results: Identifiable reason for referral was found in 83% of 24,602 test results and categorised. The major categories were follow-up of known respiratory disease (53% of 20,308 tests), investigation of specific symptoms (18%), possible specific lung disease (13%), possible induced lung disease (5%), investigation of lung function in known other diseases (5%) and pre-operative evaluation (5%). Testing in known disease and/or assessing for PF change was the primary reason for testing in 60% of tests performed.

Discussion: These data highlight the predominance of ongoing assessment of PF and the importance of access to previous test results to provide clinically useful test reports. They also emphasize the need for having valid criteria describing what constitutes a real change in the various PF parameters.

Conclusion: Since the majority of PF tests are performed to follow disease progress or response to treatment, there is a great need for defining clinically important change in pulmonary function.