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Assessment of pulmonologists' receptivity to a structured radiology report for interstitial lung disease

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TO THE EDITOR:

Interstitial lung disease (ILD) encompasses a group of more than 200 disorders, which are classified together because they affect the tissue and space around the alveoli.[1,2] Depending on the specific disorder, other lung compartments are also affected.[1,2] Despite the extent of this group, there are some international guidelines that can aid in diagnosis. In cases of suspected idiopathic ILD, there is the 2013 consensus statement, which defines imaging patterns for all interstitial pneumonias,[1] and there is the 2018 clinical practice guideline for idiopathic pulmonary fibrosis.[2]

In this context, structured radiology reports (SRRs) are a vital tool and have grown in importance in imaging studies.[3] SRRs stand on three pillars. The first pillar is the presence of headings, such as "indication" and "impression".[3] The second pillar includes subheadings, such as "organs" and "systems". The third pillar is standardization of language and elements of the report form, which is the most relevant pillar, because it is the limited, standardized language that provides most of the benefits of SRRs. First of all, SRRs reduce ambiguous language,[4] enabling more effective analysis, creating opportunities for research, and providing support for clinical decisions. In addition, this method of reporting makes it possible for radiologists to provide comprehensive reports, with greater adherence to guidelines, even when they face unusual conditions or when they usually find it difficult to remember all the elements of international guidelines and recommendations.[3,4] One study revealed that radiologists from a large university center reached a proportion of only 60.8% of conformance with the Fleischner Society guidelines for the management of pulmonary nodules.[5] SRRs tend to improve these numbers and could provide recommendations automatically, based on appropriate information.[2-5]

In order to achieve the aforementioned benefits, we developed, on the basis of previous experiences and with the approval of the Research Ethics Committee of the Santa Casa Sisters of Mercy Hospital of Porto Alegre, located in the city of Porto Alegre, Brazil, an SRR containing CT findings consistent with ILD (Chart 1).[1,2,6,7] In order to assess pulmonologists' acceptance of and opinions about this SRR, radiologists completed the SRR of a total of 58 examinations requested by 20 pulmonologists because of suspected ILD, that is, no definite diagnosis, for three months. Subsequently, a questionnaire was developed and sent to the pulmonologists, 16 of whom agreed to complete it anonymously online. Participants were questioned regarding the SRR itself, the reliability of the medical reports, and their preferred mode of receiving the reports.

The analysis of the responses received showed that most pulmonologists were between 40 and 60 years of age, 10 (62.5%) reported having read the reports in full, and all trusted the radiologist's opinion—12 (75%) trusted it completely. The mode of presentation of the report was the item of greatest disagreement; slightly more than half of the participants preferred printed images and reports (to reports stored in the cloud or on CDs). Thirteen (81.3%) of the participants found it important that the reports included a description of the technique used in the examination.

The greatest agreement was found for topics related to the SRR itself. Almost all participants (15/16) reported preferring structured to narrative free-text reports and stated that the presence of several differential diagnoses helped them think about all of the hypotheses. In this sense, 14 (87.5%) stated that the SRR made the management of patients with ILD much easier, and all participants reported some degree of facilitation.

The participants' acceptance of the SRR reinforces the benefits of this type of report and encourages its use to improve communication between radiologists and pulmonologists, thus facilitating the diagnosis of ILDs.

AUTHOR CONTRIBUTIONS

KLI, ASSJ, and EM: conceptualization and planning of the study, as well as interpretation of the evidence. JPSDB: writing and review of the preliminary drafts and final version. BH: writing and review of the preliminary drafts and final version; approval of the final version.

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Chart 1. Structured radiology report for interstitial lung disease on chest CT.

STRUCTURED REPORT FOR INTERSTITIAL LUNG DISEASE - COMPUTED TOMOGRAPHY OF THE CHEST

Technique: Examination performed without intravenous contrast medium, using high resolution technique and slice thickness of 1 mm for the assessment of lung parenchyma. Further acquisitions were made during forced expiration.
Clinical information:
Motion artifacts: yes/no
Interstitial evaluation:
Honeycombing: yes/no
Traction bronchiectasis: yes/no
Signs of loss of lung volume: yes/no
Predominant apicobasal gradient: yes/no
If yes: upper third/middle third/lower third
Predominant axial distribution: yes/no
If yes: subpleural/peribronchovascular/diffuse
Overall pulmonary fibrosis extent:
Upper third: ____% Middle third: ____% Lower third: ____%
Emphysema: yes/no
Emphysema subtype: centrilobular/paraseptal/bullous
Extent: Mild (< 5%); Moderate (5-30%); Severe (> 30%)
Lymph node enlargement: yes/no
Location: mediastinal/hilar/axillary
Increased diameter of the pulmonary artery: yes/no
Air trapping: yes/no
Diffuse lung cysts: yes/no
Extensive ground-glass pattern: yes/no
Micronodular interstitial pattern: yes/no
Consolidation: yes/no
Other findings: (Free text)
IMPRESSION:
Interstitial lung disease pattern on chest CT:
1. Consensus statement for interstitial lung diseases (updated)
1. Usual interstitial pneumonia
2. Nonspecific interstitial pneumonia
3. Desquamative interstitial pneumonia
4. Acute interstitial pneumonia
5. Organizing pneumonia
6. Respiratory bronchiolitis/interstitial lung disease
7. Lymphocytic interstitial pneumonia
8. Unclassifiable interstitial pneumonia
9. Pulmonary fibroelastosis

2. Idiopathic pulmonary fibrosis clinical guideline
1. Definitive usual interstitial pneumonia
2. Probable usual interstitial pneumonia
3. Indeterminate usual interstitial pneumonia
4. Alternative diagnoses to usual interstitial pneumonia

Comparison made with a previous examination performed on DD/MM/YYYY. **Any variation in the pattern of fibrosing lung disease, as compared with the previous study:** (Free text)
Possible diagnosis:
Chronic hypersensitivity pneumonitis. Connective tissue disease. Asbestosis. Drug-induced interstitial pneumonia. There is no imaging support for suggestion of a diagnosis.

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