ATS 2021 Welcome

Biomarkers replacing forced vital capacity testing in idiopathic pulmonary fibrosis: the views of physicians in the US compared to the EU4 & UK

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Background & Objectives

DISCLOSURES

Authors are employees of Ipsos.

There are no conflicts of interest to declare for any of the listed authors.

BACKGROUND

Decline in forced vital capacity (FVC) is predictive of mortality in idiopathic pulmonary fibrosis (IPF) patients and has been used as a primary measure of disease progression for many years. However, there is significant variability in FVC results over time, so predicting the course of disease and treatment response of patients is not reliable1. Biomarkers could provide more accurate diagnostic and prognostic methods and many have been identified, including surfactant proteins (SP-A, SP-D), mucin 5B, telomerase reverse transcriptase (TERT), telomerase RNA complex (TERC) and matrix metalloproteases (MMPs)2. However, testing for biomarkers is yet to be regularly incorporated into the diagnostic process.

OBJECTIVES

To understand the views of physicians on the need for biomarkers in idiopathic pulmonary fibrosis and how they are reflected in patient testing.

1Nathan et al. (2020). FVC variability in patients with idiopathic pulmonary fibrosis and role of 6-min walk test to predict further change. European Respiratory Journal, 55 (5) 1902151. DOI: 10.1183/13993003.02151-201.
2Sgalla et al. (2018). Idiopathic pulmonary fibrosis: pathogenesis and management. Respiratory Research, 19 (1), 32. DOI: 10.1186/s12931-018-0730-2.

Methods & Limitations

METHODS

Ipsos' Idiopathic Pulmonary Fibrosis (IPF) Therapy Monitor, a syndicated online patient chart review study, collected data in Q2 2020 from 86 pulmonologists in US and 220 physicians (70% pulmonologists, 16% pneumologists, 9% respiratory consultants and 5% chest physicians) in Europe (France – 40; Germany – 50; Italy – 50; Spain – 40; UK – 40). Physicians were recruited from a panel and were required to have been practicing for 3 to 35 years, to have managed IPF patients for at least 2 years and directly managed the treatment of 5 or more IPF patients in the last 12 months. Physicians answered a perceptual questionnaire and provided de-identified demographic, disease and treatment data on 430 patients in US and 1100 patients in Europe (France – 200; Germany – 250; Italy – 250; Spain – 200; UK – 200) who attended an appointment, either in person or via telemedicine, in the last 12 months. Data were analysed using descriptive statistics. Fieldwork was carried out from March 2020 to May 2020.

LIMITATIONS

Patient management practices reported in this study represent the practices of physicians participating in this study only and may vary from those of non-participating physicians.

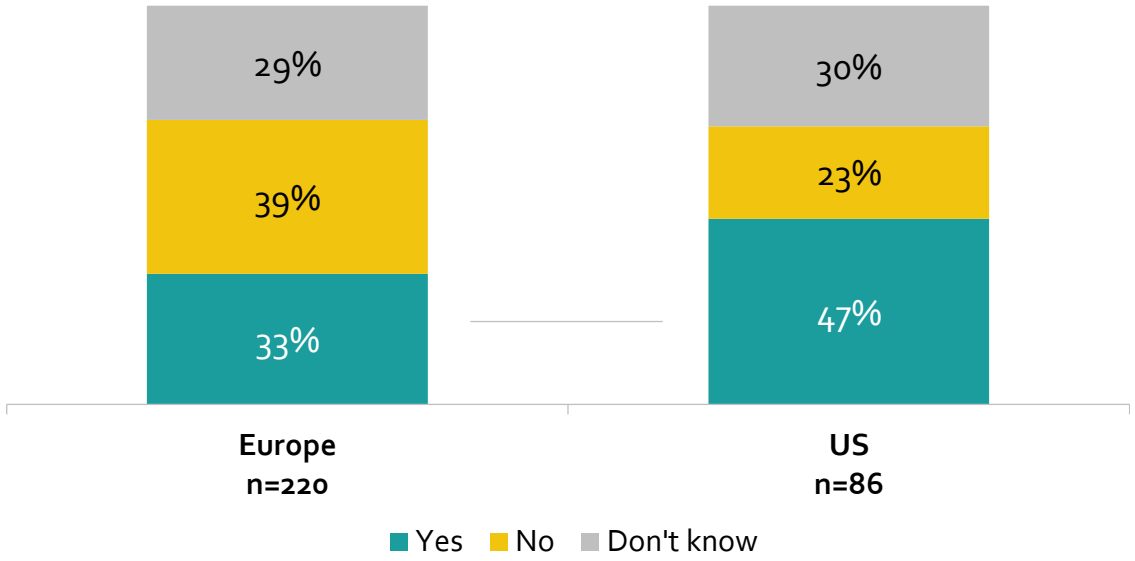
Results (1)

Physicians in US were more likely than physicians in Europe to believe that biomarker examination will replace FVC testing as the primary measure of disease progression in the next five years

47% of the US physicians surveyed believe that biomarker examination could replace FVC testing as the primary measure of disease progression in IPF in the next five years. This is a notable difference when compared to those physicians who do not believe that biomarker testing will become the standard practice (23%) (Figure 1).

The proportion of US physicians who believe that biomarkers will replace FVC testing was significantly greater than the proportion of physicians in Europe who felt the same (US 47% vs Europe 33%) (Figure 1).

Figure 1. Physicians' beliefs on whether biomarker examination will replace FVC testing in the next five years.



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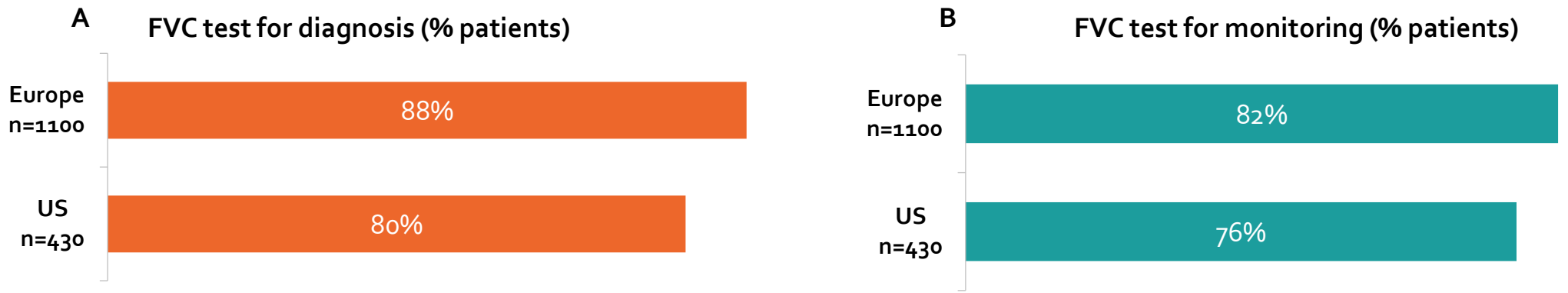
Results (2)

In line with their beliefs, US respondents are using less FVC testing less than their counterparts in Europe

According to our survey participants, significantly fewer patients in the US were diagnosed and monitored using FVC testing. For diagnosis, 80% of reported patients in the US were monitored using FVC testing versus 88% of patients in Europe (Figure 2A). Additionally, 76% of the US patients had FVC tests for monitoring compared to 82% of the patients in Europe (Figure 2B). These data suggest that the perceptions of US physicians regarding the tests used in IPF diagnosis and monitoring are changing faster than perceptions of physicians in the European markets surveyed. US physicians are perhaps already starting to move away from FVC testing, in line with their beliefs on biomarker examination.

Figure 2. Use of FVC testing for the diagnosis (A) and monitoring (B) of IPF



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Results (3)

The need for biomarkers is clear but physician awareness and patient testing are still low

Further supporting the beliefs of US physicians on biomarkers replacing FVC, one in two respondents state that *improved diagnostic methods, tests and criteria* would increase confidence in diagnosis of IPF. Four in nine state *biomarkers and genetic testing* would aid diagnosis confidence (Figure 3).

However, current testing is extremely low in both regions and less than half were aware of some key genes and biomarkers. This will need to increase for biomarker testing to become part of regular practice (Figure 4).

Figure 3. Top three things that would increase the confidence of physicians in diagnosis of IPF.

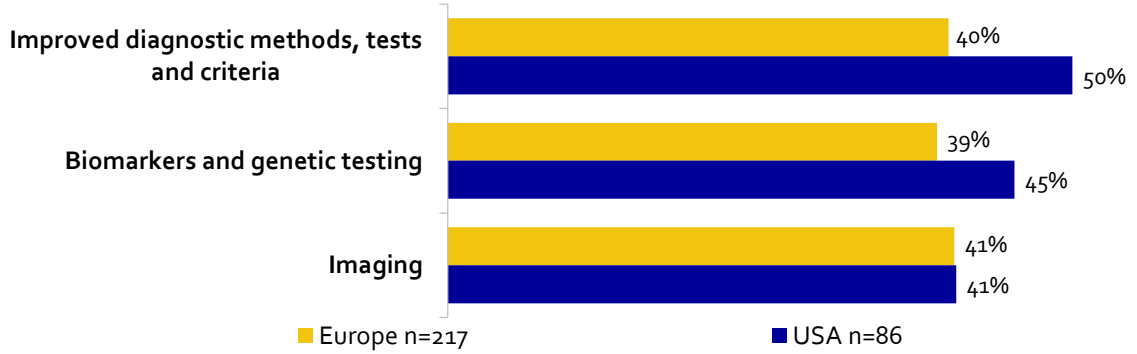
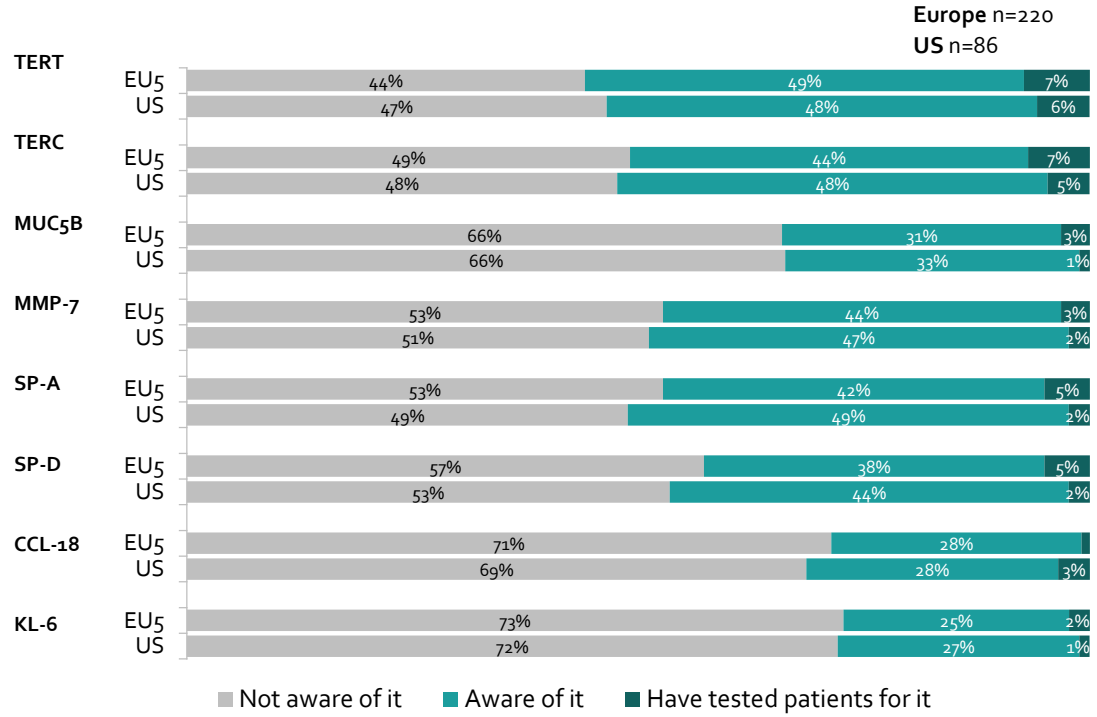


Figure 4. Physician awareness of key genes and biomarkers.

TERT – telomerase reverse transcriptase; TERC – telomerase RNA; MUC5B – MUC5B polymorphism; MMP-7 – matrix metalloprotease 7; SP-A – surfactant protein A; SP-D – surfactant protein D; CCL-18 – chemokine ligand 18; KL-6 – Krebs von den Lungen 6.



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Conclusion

In IPF, biomarkers and genetic testing have the potential to increase the reliability of diagnosis and monitoring of disease progression and ensure patients are diagnosed as early and quickly as possible in order to receive treatment. Using biomarkers may lead to the use of personalised medicine in IPF, which would allow patients to receive optimal treatment.

The data suggest that US physicians are hopeful for a move towards using biomarkers as a primary measure in IPF diagnosis and monitoring of disease progression, more so than physicians in Europe. The data on diagnosis and monitoring tests also suggest that the behaviours of US physicians might already be changing in line with this belief.

However, respondents' awareness of key genes and biomarkers identified so far for IPF is still low and current testing is even lower in both regions. This suggests there is still some way to go before biomarkers and genetic testing will be incorporated into regular practice and diagnostic processes.