Overview of Lung Cancer Screening Studies in France and Bordering Countries

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INTRODUCTION

Lung cancer (LC) is the 3rd most common cancer in France, and the 1st leading cause of death. As the symptoms of LC are not specific to this pathology, early diagnosis is complicated. The main risk factor for LC is smoking: it is estimated that 80% of LCs are attributable to smoking (1).

This raises the question of the benefits of introducing LC screening by low dose scanner.

Several studies have already been launched on the subject in different countries around the world.

In France, a pilot program (2) is being launched by the *Institut National du Cancer*, at the request of the *Haute Autorité de Santé* (HAS, French HTA body), to assess the benefits of introducing organized French national screening by 2030.

PROJECT OBJECTIVE

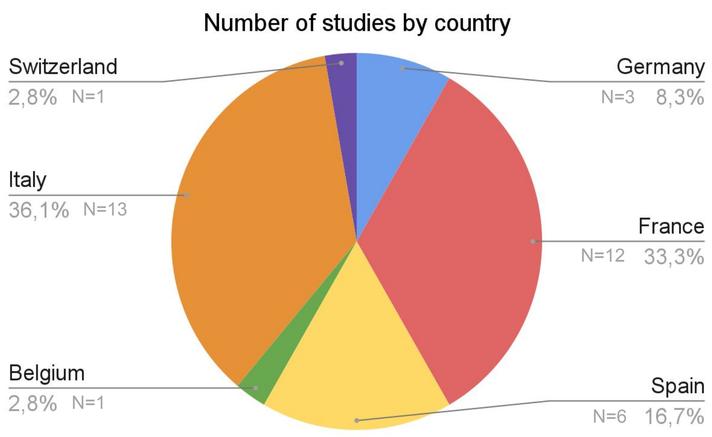
We aim to describe the design of ongoing and completed LC screening trials in France, Belgium, Germany, Switzerland, Italy and Spain, including the main eligibility criteria and the principal objectives of the trials.

METHODS

Studies were selected via the "lungcancerpolicynetwork" website (3), and each study referenced for the 6 selected countries was systematically searched and analysed using the original articles found on PubMed, and, if not available, an exhaustive review of clinicaltrials.gov and grey literature in order to extract the relevant data.

RESULTS

Among these 6 countries, 33 different studies about LC screening were referenced, including 1 involving 4 countries (France, Italy, Spain and Germany).
Italy was the country with the largest number of conducted and ongoing studies (n=13), followed by France (n=12).
Completed study durations varied between 2 and > 15 years.



Among the eligibility criteria for LC screening, the minimum age limit for screening is 55 years old (51%), closely followed by 50 years old (36%).

Minimum age of eligibility for LC screening	N	%
40 years old	1	3.0%
45 years old	2	6.1%
50 years old	12	36.4%
55 years old	17	51.5%
60 years old	1	3.0%

The maximum age limit for participation in screening is mainly set at 75 years old (30%) and "no age limit" (30%).

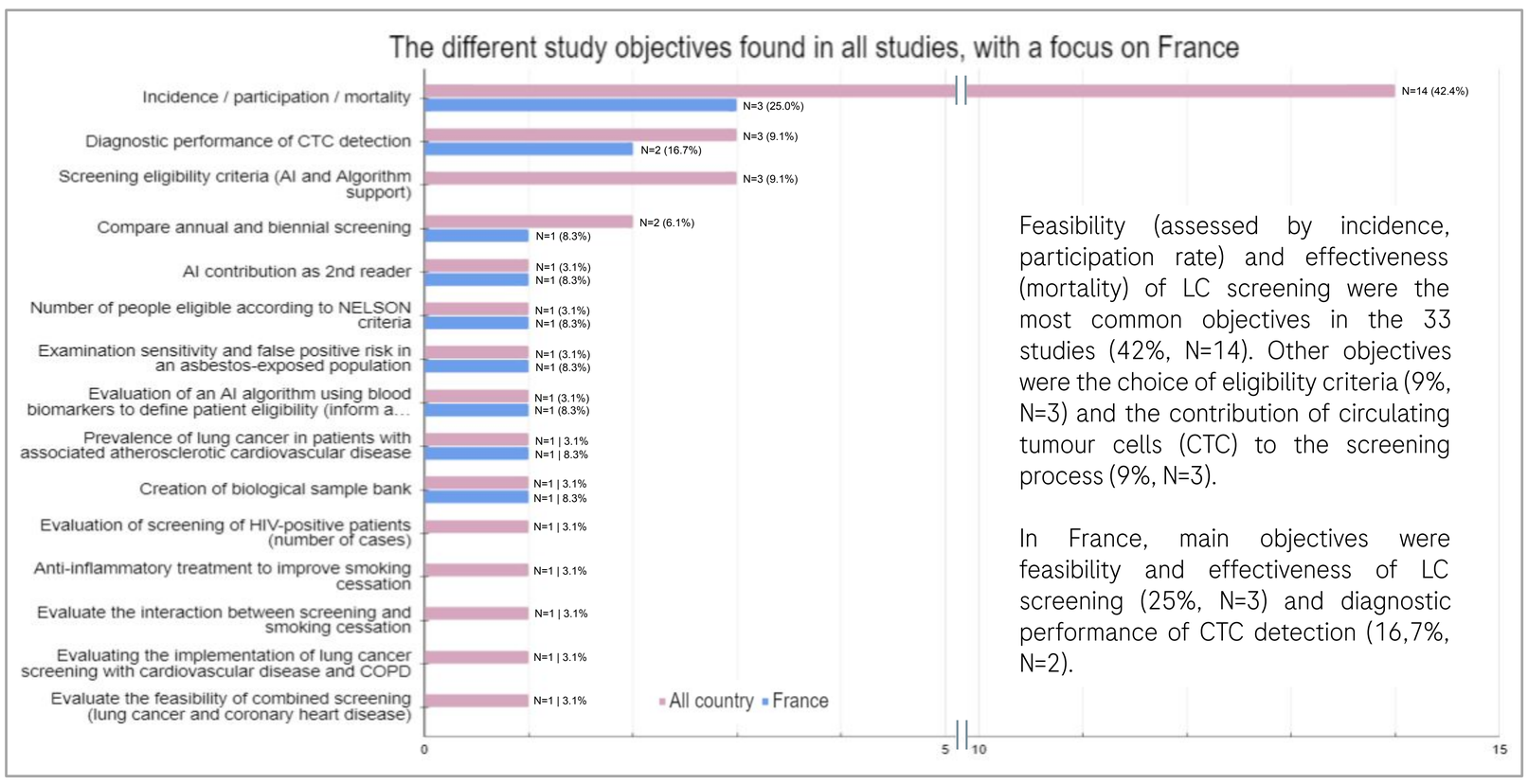
Maximum age of eligibility for LC screening	N	%
69 years old	2	6.1%
74 years old	5	15.2%
75 years old	10	30.3%
79 years old	2	6.1%
80 years old	4	12.1%
no age limit	10	30.3%

In order to be eligible for LC screening, the most frequently requested smoking level is 30 PA (39%), and studies agree on a maximum of 10 years (33%) and 15 years (45.5%) of cessation.

Smoking history for eligibility to LC screening	N	%
NA	1	3.0%
≥ 15 cigarettes / day	1	3.0%
≥ 15cig/d >25years or ≥ 10cig/d >30years	6	18.2%
smokes every day for at least 10 years	1	3.0%
≥ 30 PY or ≥ 20 PY and a risk factor for lung cancer	1	3.0%
≥ 10 PY from 2016 to 2020 then ≥ 20 PY	1	3.0%
≥ 10 PY	1	3.0%
≥ 20 PY	6	18.2%
≥ 25 PY	1	3.0%
≥ 30 PY	13	39.4%
> 40 PY	1	3.0%

Duration of smoking cessation for eligibility to LC screening, if former smoker	N	%
NA	7	21.2%
< 10 years cessation	11	33.3%
< 15 years cessation	15	45.5%

NA: Not Available



Feasibility (assessed by incidence, participation rate) and effectiveness (mortality) of LC screening were the most common objectives in the 33 studies (42%, N=14). Other objectives were the choice of eligibility criteria (9%, N=3) and the contribution of circulating tumour cells (CTC) to the screening process (9%, N=3).

In France, main objectives were feasibility and effectiveness of LC screening (25%, N=3) and diagnostic performance of CTC detection (16,7%, N=2).

DISCUSSION / CONCLUSION

Many trials have already been initiated in Europe, and France is one of the main contributors to the evaluation of LC screening.

Most of the studies identified have the same main objective, which is to demonstrate the feasibility and effectiveness of LC screening programmes. However, the inclusion criteria used are not consensual, particularly with regard to tobacco consumption and the age limit for eligibility.

In addition, none of the studies identified had the primary objective of assessing the organisational and economic impact of setting up these screening programmes, despite the importance of health economic criteria for the future evaluation by the HAS in 2030 for France.

Finally, additional studies, programmes and tools, such as predictive models, could be useful to optimised participation rate in the target population and to increase the effectiveness of LC screening programmes.

REFERENCES

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