PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (http://bmjopen.bmj.com/site/about/resources/checklist.pdf) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Circulating tumor cells as a potential screening tool for lung cancer (the AIR study). Protocol of a prospective multicenter cohort study in France
AUTHORS	LEROY, Sylvie; BENZAQUEN, Jonathan; MAZZETTA, Andrea; MARCHAND ADOUR, Sylvain; PADOVANI, Bernard; ISRAEL-BIET, Dominique; PISON, Christophe; CHANEZ, Pascal; CADRANEL, Jacques; Mazières, Julien; JOUNIEAUX, Vincent; COHEN, Charlotte; HOFMAN, Véronique; ILIE, Marius; Hofman, Paul; MARQUETTE, Charles

VERSION 1 – REVIEW

REVIEWER	Prof. Dr. Lutz Freitag
	University Hospital Essen, Germany
REVIEW RETURNED	30-Aug-2017
GENERAL COMMENTS	Excellent work. I suggest that you consider changing "patients" to
	"study participants" as my understanding is that they do not have to
	be sick to participate.
	I found a single typo (page 4, line 55 "to" instead of "too".
	The only thing that I am missing in the discussion is a scenario that
	might force you to stop the study for whichever reason. E.g.you do
	not mention an interim analysis. What would you do if you would find
	far more CTCs than you would expect. The "normal" definitions of
	SAEs or SUSAs would no be applicable.

REVIEWER	Renee Manser
	Department of Respiratory Medicine, Royal Melbourne Hospital,
	Grattan Street, Parkville, Victoria. Australia
REVIEW RETURNED	01-Sep-2017

GENERAL COMMENTS	 The study is very worthwhile and the methodology appropriate however the sample size is relatively small and the sample size calculation lacks details about the actual method used and what outcome measure this is based on. The primary and secondary objectives outlined in the study design and objective section are broad and poorly defined. In the outcome section the primary outcome measure is the "rate of detection of 'CTCs" for who lung cancer is detected during the study" It would be more appropriate to discuss Sensitivity/specificity and PPV and NPV as the primary outcomes and these are mentioned in the statistics section.
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My impression is that a more appropriate way to phrase the primary aim of this study would be- 'To determine the sensitivity, specificity, PPV and NPV of CTCs for the early detection of lung cancer in a cohort of asymptomatic participants at high risk for lung cancer. Similarly, secondary objectives should be more focused – eg "to determine the sensitivity and specificity for the diagnosis of lung cancer in patients with screen detected pulmonary nodules at high risk for lung cancer".
The hospital and anxiety depression scale will not be sensitive enough to detect subclinical psychological distress associated with screening.

VERSION 1 – AUTHOR RESPONSE

The reviewers comments were very helpful and constructive. We revised our manuscript according to their comments and recommendations.

VERSION 2 – REVIEW

REVIEWER	Lutz Freitag Klinik St. Anna, Hirslanden Group Luzern, Switzerland
REVIEW RETURNED	25-Sep-2017

GENERAL COMMENTS Well done, good luck with the study
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