

## COVID-19 swab collection and serological screening in lipoprotein apheresis unit

Dear Editor,

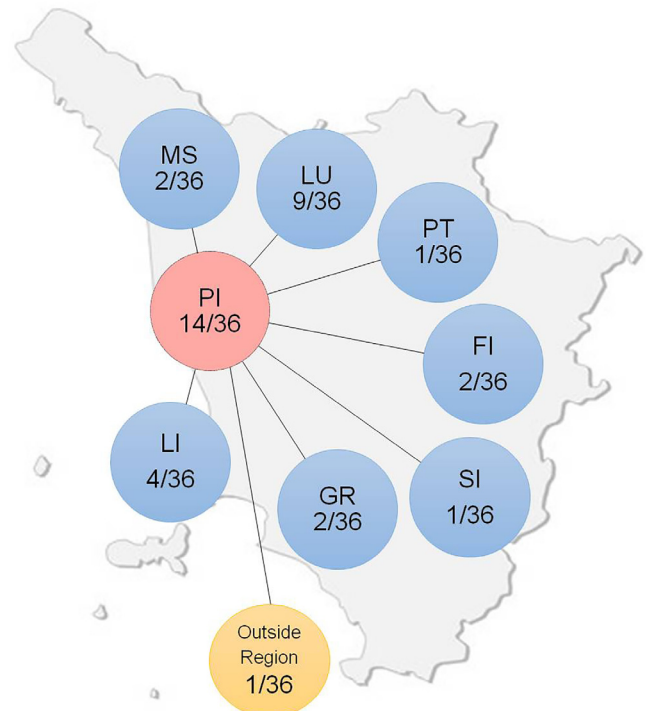
In Italian regions, nowadays are recorded 223 096 cases with a 14% of overall mortality patients from COVID-19 infections<sup>1</sup> and few settings are progressively learning to manage the outbreak.<sup>2</sup>

In our Lipoprotein Apheresis (LA) Center, since 1994, we performed more than 500 treatment/y and, currently, 36 subjects (mean age  $64 \pm 10$  years; male 25/36) are on active treatment for inherited dyslipidaemias which are often associated with comorbidities (coronary heart disease 31/36—86%, arterial hypertension 13/36—36%, overweight 12/36—33%, chronic kidney disease 3/36—8%, diabetes 2/36—6%). They are at high-risk patients<sup>3</sup> and it is therefore imperative to protect them and the health care team against the COVID-19 outbreak in consideration that, in LA units, several individuals are treated at the same time, in a definite area, which may be crowded.

In own unit, LA procedures are performed in agreement to guidelines and manufacturer's instructions, with a median interapheresis interval of 14 (10–14) days. All patients, except one, are from Tuscany, Italy (Figure 1). We started a monitoring protocol based on: (a) telephone call performed 2 days before LA treatment, in order to fill out a questionnaire and identify clinical symptoms as fever, dry cough, headache, loss of taste or smell, and day life style information, particularly about contact with positive COVID-19 subject or travel to specific regions; (b) real-time polymerase chain reaction assays for the detection of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) on upper respiratory specimens collected through swabs performed the day before LA. The swab sample was taken throughout a dedicated window by a nurse wearing an appropriate protective equipment, whereas the patient did not enter the facility but was standing outside; (c) repetition of the questionnaire and body temperature check when the patient arrives at the entrance of the facility; (d) all patients undergoing LA are wearing surgical mask and maintaining a social distanced of 1.8 m (including bed space); and (e) serological testing (Coronavirus Disease 2019 Antibody [IgM/IgG] Combined Test Kit—Medical Systems Biotechnology) is done before every LA treatment. Furthermore, the staff

was included in an integrated COVID-19 infection prevention and control strategy<sup>4</sup> and body temperature check was performed every day at the facility entrance.

This protocol recently started and was progressively implemented, resulting in quarantine of two subjects: one with history of travel in Lombardy (the major outbreak area of Italy) and the second who was asymptomatic but in close contact of confirmed case. This second case developed positive SARS-CoV-2 swab and was maintained in quarantine at home. He restarted LA after two consecutive negative SARS-CoV-2 swabs performed at 7 days apart, and the serological tests detected IgG



**FIGURE 1** Geographical areas of patients. Nord-West District (Leghorn, Lucca, Massa Carrara, Pisa): 37% of Tuscany COVID-19 cases; Center District (Florence, Pistoia, Prato): 46% of Tuscany COVID-19 cases; South-East District (Grosseto, Siena, Arezzo): 15% of Tuscany COVID-19 cases. FI, Florence; GR, Grosseto; LI, Leghorn; LU, Lucca; MS, Massa Carrara; PI, Pisa (area of the Lipoprotein Apheresis unit); PT, Pistoia; SI, Siena

positivity. Nowadays, anyone of the staff had COVID-19 related positivity.

This approach had some similitude with the *Remanzacco* approach<sup>5</sup> because asymptomatic patients are able to transmit the infection and extensive collection of nasal swabs can be effective in containing the COVID-19 outbreak especially in subjects at higher risk of serious COVID-19 disease as patients on chronic LA.

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#### CONFLICT OF INTEREST


The authors declare no potential conflict of interest.

#### STATEMENT OF HUMAN RIGHTS

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

#### INFORMED CONSENT

Not applicable.

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