

Where have the ST-segment elevation myocardial infarctions gone during COVID-19 lockdown?

The coronavirus disease 2019 (COVID-19) outbreak has threatened to overwhelm European healthcare systems, potentially overshadowing other emergencies including ST-segment elevation myocardial infarction (STEMI).¹

We analysed the impact of the COVID-19 national lockdown on STEMI care in 3318 patients enrolled in the prospective France

Percutaneous Coronary Intervention registry between 15 January 2019 and 14 April 2020. The registry prospectively follows all patients undergoing coronary angiography at 12 interventional cardiology centres located in the western part of France which is coincidentally the area least impacted by the outbreak. The ethical aspects, basic methodology and rationale for the registry have been already described and published.²

Comparing monthly admission rates in the pre-COVID-19 group (enrolled before 15 March 2020, the date of national lockdown announcement) to rates post-lockdown, there was a 18% drop in admissions for STEMI, from a median of 224 per month pre-COVID-19 to 184 per month in the COVID-19 group

($P < 0.001$) (Figure 1) and spectacular drop of 25% between the month of March 2019 and March 2020 ($P < 0.003$).

The steep decline was found for both acute (<24 h) and late presentation (>24 h) STEMI.

This is the first structured analysis of large prospective European registry data to confirm a major reduction in STEMI admissions during the COVID-19 lockdown. Our results are in line with a recently published analysis from STEMI activations for nine high-volume US centres, although the cut-off date in that study was not a lockdown date but 1 March, the date when US social life and medical operations were becoming significantly affected.³ Physician surveys have also indicated a decline in the incidence in stroke admissions.⁴

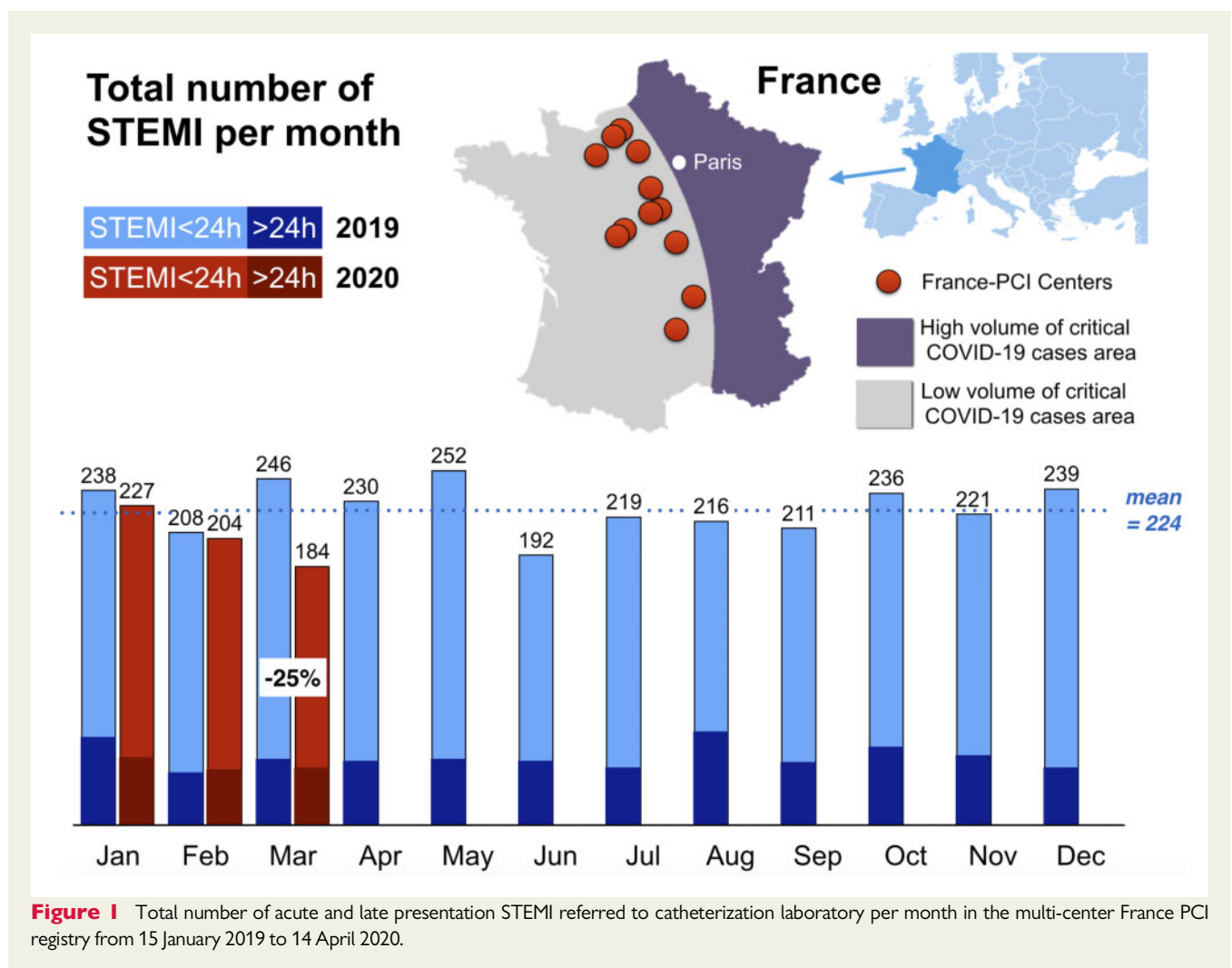


Figure 1 Total number of acute and late presentation STEMI referred to catheterization laboratory per month in the multi-center France PCI registry from 15 January 2019 to 14 April 2020.

The reasons for these phenomena are unclear. One explanation may be patients' fear of coming to the hospital or disturbing busy caregivers, especially in case of atypical or mild STEMI clinical presentation. Other hypothetical reasons are reduced air pollution, better adherence to treatment, limited physical activity, or absence of occupational stress during lockdown. Although all are possible it is difficult to see how they can account for the sudden and sharp drop observed in our multicentre cohort. A dramatic reduction in mortality from circulatory disease was observed during World War II⁵ suggesting a possible temporary 'stunning' or 'pause' of some diseases in extraordinary situations such as war or a worldwide health crisis. Yet the missing STEMI seem out of all reasonable proportion and the answer to the question 'where have the STEMI gone' will be difficult to elucidate.

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