Short-Term Impact of the COVID-19 Pandemic on Cardiology Service in Oman

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The first case of COVID-19 was diagnosed in Oman on February 24, 2020. Since that time, the number of cases started to increase particularly after the case definition was changed and the link to travel history was omitted. Although cases were diagnosed in many governorates in Oman, like what happened in many countries, the most severely affected governorate initially was the capital, Muscat. This is mainly because it has a population of around 1.4 million, which is equivalent to 30% of Oman’s total population, and the main airport and seaport are in Muscat.

With the increasing number of overall diagnosed cases, the number of patients requiring hospital admission increased. We learned with time that around 5% of the total positive cases require hospital care, and about 1% require intensive care unit (ICU) care (20% of the admitted cases). This has put a lot of pressure on the hospitals, which forced them to reduce their routine services initially, but later to stop them completely, and continue providing emergency services with some other services, including obstetric and cancer care.

In Oman, general cardiology service is provided in all governorate hospitals, which are distributed across the 11 governorates in the country. However, cardiac catheterization service is available only in Muscat and Salalah. The service in Salalah, which is around 1000 km south to Muscat, is fortunately not yet affected at the time of writing this article as its number of COVID-19 cases is not high. However, the service in Muscat has been significantly affected.

There are two tertiary centers with Cath-Lab facilities in Muscat, namely the National Heart Center (NHC), which is linked to the Royal Hospital, and the cardiology department at Sultan Qaboos University Hospital (SQUH). The NHC was opened in May 2014 and consists of 139 beds, all of which can be converted into ICU beds. During the pandemic, this center was fully dedicated to caring for patients with COVID-19, while the cardiology service was moved back to its previous place in the Royal Hospital’s main building.

As the number of COVID-19 cases started to increase in May, outpatient visits in almost all hospitals were intentionally reduced to decrease crowding in the waiting areas, and reduce staff exposure. Many hospitals used telephonic consultation, and appointments were rescheduled if there were no compelling reasons to attend the outpatient department (OPD) physically. However, prescriptions were re-filled and patients were either directed to collect the medications from the nearest health centers or given a specific time to receive medicine from the hospital by WhatsApp message. This reduced the OPD visits by more than 50% in many hospitals.

Some departments, such as the electrophysiology department at the NHC, used tele-medicine consultation and prescribed medication as needed. All nonurgent, noninvasive procedures were rescheduled to later dates.

In the NHC, working hours were spread to the late evening, in an attempt to reduce crowding of patients and staff in the Cath-Lab while trying to maintain the overall procedure volume. As shown in Table 1, the total Cath-Lab procedures were reduced by 22% for the period between March and June 2020 compared to the same period of 2019.

Because of their nature, the most affected were electrophysiology procedures (50% reduction) as...

Statement

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compared to coronary angiography (CAG, 22% reduction) and percutaneous coronary intervention (PCI, 11% reduction). The greatest reduction was in May, possibly because it coincided with the fasting month of Ramadhan, during which patients are usually reluctant to have procedures. However, both CAG and PCI picked up quite well in June [Figure 1].

In SQUH, the number of Cath-Lab procedures was also intentionally reduced for the same reasons. From March until July 2020, all elective cases were canceled. Comparing to 2019, the total number of procedures done between March 1 and July 31 in 2020 was reduced by 35%.

Although elective services were initially reduced intentionally as mentioned, however, with time, the number of staff in most of the departments was reduced for several reasons, including mobilization to COVID-19 caring areas, isolation due to contact with COVID patients, mainly in the community, and quarantining for symptoms suggestive of COVID-19.

Figure 2 compares the number of visits to the emergency rooms (ER) in the whole country for acute coronary syndrome (ACS) and heart failure (HF) for the period between March to June 2020. Overall, there was a 23% reduction in ER visits for ACS and a 14% reduction for HF. This is likely due to the fear of visiting hospitals during the pandemic.

At the time of writing this article, the overall number of cases in Oman is getting stabilized, particularly evident in Muscat. We are now planning to resume some services which were stopped for the last few months, hoping that the number of COVID-19 cases continues to come down, allowing us to resume near-normal services soon.

However, the long-term impact of delaying cardiovascular services and procedures, and the consequences of cardiac patients avoiding presenting to the hospital because of the fear of COVID-19, will only be seen with time.

### Table 1: Cath-Lab procedures, National Heart Center

| Procedure                | Reduction (%) |
|--------------------------|---------------|
| Coronary angiography (CAG)| 22            |
| PCI                      | 11            |
| Electrophysiology        | 50            |
| Pediatric intervention   | 8             |
| Total procedures         | 22            |

PCI: Percutaneous coronary intervention, CAG: Coronary angiography