

VIEW POINT

COVID-19 causes more mortality of men than women, why and how?**Scientists view****M S A Mansur Ahmed**

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My observation

As of August 6, 2020, 15;46 GMT COVID -19 cases were 19,062,200 and deaths were 712,741(1). Since the inception of Covid-19, countries around the world are reporting the mortality rate of COVID-19 is significantly higher in men than it is in women. In almost all countries where data is available, it appears men are dying at a higher rate once infected with COVID-19 (2). Research suggests that mast cells in women are able to initiate a more active immune response, which may help them fight infectious diseases better than men. Initial reports from China revealed the early evidence of increased male mortality associated with COVID. According to the Global Health 50/50 research initiative, nearly every country is now reporting significantly higher COVID-19-related mortality rates in males than in females as of June 4 (3). As regards sex of the first deaths reported by the China National Health Commission (NHC) a review was done. The NHC reported the details of the first 17 deaths up to 24 pm on January 22, 2020. The deaths included 13 males and 4 females (4). According to the WHO Situation Report no. 7 issued on Jan. 27, 71% of cases were male. (5)

In other words, while men and women are being infected with COVID-19 at similar rates, a significantly higher proportion of men succumb to the disease than women, across groups of similar age. Why is it then that more men are dying from COVID-19? Or rather, should we be asking why are more women surviving? As per immunologists, Mast cells play a pivotal role in our immune systems as they act as first responders to pathogens and orchestrate immune responses that help clear the invading pathogens. Research showed that mast cells from females are able to initiate a more active immune response, which

may help females fight off infectious diseases better than men. Recent evidence indicates that mast cells are activated by SARS-CoV-2 which causes COVID-19. In general, females have a more robust immune response than men which may help females fight off infections better than males. This could be a result of genetic factors or sex hormones such as estrogen and testosterone. Biological females have two copies of the X chromosome, which contains more immune genes. While the genes on one X chromosome are mostly inactive, some immune genes can escape this inactivation, leading to double the number of immune-related genes and thus double the quantity of certain immune proteins compared with biological men who have only one X chromosome (2). Sex hormones such as estrogen and testosterone can also impact the immune response. In one study, researchers showed that activating the estrogen receptor in female mice provided them protection against SARS-CoV-2. And there is an approved clinical trial that will examine the effects of estrogen patches on the severity of COVID-19 symptoms (2).

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