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Matric no:17/Mhs01/283

Department: Anatomy

Course code: Ana 308(Embryological Mechanism and Teratology and Reproductive Techniques)

Questions

1. From our understanding of teratology, can we say Corona virus is a teratogen and if No/Yes, justify your answer?
2. What are the impact of ageing and environment in the outbreak of this novel COVID-19?
3. Summarize the importance of oogenesis and spermatogenesis?
4. Describe what you understand by personal hygiene and disaster, hence state their correlation if there is any?

Answers

1. From current research on the Corona virus it is said that facts have not been stated whether it is a teratogen or not but teratology is a science that studies the causes, mechanisms and pattern of abnormal development in embryos. Examples of teratogens are metals, chemicals, drugs, diseases, heat etc. Although there appears to be some risk of premature rupture of membranes, preterm delivery, fetal tachycardia, and fetal distress

when the infection occurs in the third trimester of pregnancy, there is no evidence suggesting trans placental transmission based on very limited data, as the analysis of the amniotic fluid, cord blood, neonatal throat swab, and breast milk samples available from six of nine patients were tested and found negative for SARS-COV-2. And transmission for the virus in most cases have shown evidence of human transmission. The virus can be found in respiratory secretions, feces and fomites. There are currently two ways in which Covid-19 can spread:

- Directly from close contact with an infected person (within 2 meters), as respiratory secretions can enter the eyes, mouth, nose or airways. The risk increases the longer someone has close contact with an infected person who has symptoms.
- Indirectly, by touching a surface or object (or hand of an infected person) that has been contaminated with respiratory secretions and then touching one's own mouth, nose or eyes. Whether virus shedding occurs vaginally is also not known. Whether COVID-19 increases the risk of miscarriage and still birth is unknown. Also information on the effect of COVID-19 on the course and outcome of pregnancy in the first and second trimesters is not available yet. Therefore, it is safe to say that it has not been discovered, due to the short time span of the outbreak of the disease, whether corona virus is a teratogen or not.

2i. **Impact of ageing in the outbreak of this novel COVID-19**: The COVID-19 pandemic is ravaging the global population in drastic ways. In many countries, older people are facing the most threats and challenges at this time. Although all age groups are at risk of contracting COVID-19, but then older people face significant risk of developing severe illness if they contract the disease due to physiological changes that come with ageing and potential underlying health conditions. Older adults are at a significantly increased risk of severe disease following infection from COVID-19. Over 95% of these deaths occurred in those older than 60 years. More than 50% of all fatalities involved people aged 80 years or older. That data along with emerging research from Italy- the second most affected country in the world- is showing just how dangerous covid-19 is for older people and others with heart, lung and immunological conditions. Immune functions declines with age. That makes them more susceptible to more severe illnesses. In older adults the number of white blood cells that find and help eliminate infections can decline. The cells also become less adept at identifying new pathogens to fight. In the case of covid-19, the virus can also damage the immune cells that may otherwise overcome the virus. If there are fewer of these cells to begin with, and they are also weaker than they once were, an illness can do more damage.

2ii. Impact of environment in the outbreak of this novel COVID-19

There has been much progress about the potential climate impact of the Corona virus related shutdown. Data from the Sentinel-5P-satellite shows that nitrogen dioxide air pollution levels have plummeted across Europe since the pandemic. NO₂ is emitted in most cases by burning fossil fuels at high temperatures, as in internal combustion engines. Short term air pollution, which lasts for a few hours or a few days in the atmosphere, has dropped, and that is considered positive news. The pandemic has led Italy to ban infected residents from sorting their waste at all which has inhibited recycling. Many corporations have overturned disposable bag bans and begun relying once again on single-use plastics, and many restaurants are no longer accepting reusable containers. Furthermore, with more and more consumers isolated at home, there has been an increasing number of online purchases and meal deliveries made. This has not only caused the disposal of more single-use plastic packaging, but has further required more fossil fuels to be burned for the individual transportation and distribution of goods. There has also been an increase in medical waste – much of the personal protective equipment that healthcare professionals are using can only be worn once before being disposed of. Even if mass isolation were aiding in the reduction of climate change, it would not be a sustainable way of cleaning up the environment. This temporary shift of gears could lead to a long term shift in old behaviors

and assumptions, which could lead to a public drive for collective action and effective risk management.

3. Importance of spermatogenesis and oogenesis

For Spermatogenesis:

- Provide haploid motile sperm
- Held in causing variations in offspring
- Sperms have half the number of chromosomes, after fertilization, the diploid chromosome number is restored

For Oogenesis:

- Provide haploid ovum
 - Most of the cytoplasm is retained in the functional ovum
 - Variations may occur due to crossing over during meiosis
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- 4. Personal hygiene involves those practices performed by an individual to care for one's bodily health and wellbeing through cleanliness. A disaster is a serious disruption occurring over a short or long period of time that causes widespread human, material, economic or environmental loss which exceeds the ability of the affected community or society to cope using its own resources.

The correlation of personal hygiene and disaster therefore simply states that during or after a major disaster, the risk of becoming ill from disease or infection is very high . The maintenance of personal hygiene and a hygienic environment are the biggest priorities after or during a disaster. So the only way one can be safe through a disaster is by staying clean because that will be the best way to prevent a person from getting ill during this time. Washing hands, brushing teeth, and taking showers are the first line of defense against disease. Clean hands saves lives in emergency situations.