UK-CAB 73: UK-CAB company meeting with Janssen

Friday 17 July 2020

Meeting report

Introduction

Janssen is the pharmaceutical arm of Johnson and Johnson. Currently the six main health areas of focus are:

- Cardiovascular & Metabolism
- Immunology
- Infectious Diseases & Vaccines
- Neuroscience
- Oncology
- Pulmonary Hypertension

Janssen no longer rely solely on HIV within their infectious diseases work and have adapted a broad-based approach in recent years, and a significant focus on vaccines. Within their Infectious Diseases & Vaccines work, they are currently looking at:

- Hepatitis B
- Pathogens of global concern: including Ebola, Zika, also Polio, and furthermore some sexually transmitted infections i.e. HPV and HSV
- Respiratory infections: including Influenza, and much more recently the development of a SARS-CoV-2 vaccine (the virus that causes COVID-19)
- HIV

To manage and offset the risks that come with producing vaccines (high investment with potential of no return) they work in global partnerships and maintain a strategy of working on vaccines to meet high unmet need.

Coronavirus and COVID-19

Janssen are working with a number of different partners to produce a SARS-CoV-2 vaccine. A billion vaccines are required, huge fulfilment task especially when compared to pill-based medicine. First human trials are expected to start w/c 20.07.2020. The technology to produce this vaccine is shared amongst the partners involved, Janssen were questioned on the need to patent a vaccine required for a pandemic, they advised they would be happy to share the IP (International non-Proprietary name, IP - is globally recognised and is used to identify active ingredients of medicines and drugs) but all partners involved need to agree on this.

When questioned about the Russian hacking accusations they advised that all the information is already in the public domain, Janssen are not working on anything that a 'good scientist' wouldn't be aware of etc.

Janssen not averse to working with the WHO in future, but they're not a current collaboration partner.
Currently it is unknown if the vaccine would be required annually or long-lasting. However, respiratory infections tend to require an annual vaccine. They hope for a strong immune response, but there are concerns that this might only be found in the blood plasma, rather than the throat, where initial infection starts. Globally there are around 180 candidate vaccines in development with a dozen in human trials. The world population will need more than one to be produced as no one partnership has the means to manufacture enough to meet demand.
Essentially the vaccine has already been produced, it will be given emergency use authorisation. Government in the UK has outlined who this is in a statement from the JVCI but namely priority will be given to key workers and those most at risk.

Pandemic impact on Janssen's work
Where possible a community nursing approach can be used to deliver vaccines to people. Challenge with vaccines is that a healthcare professional is required to deliver them so there is a restriction on how much can be done in someone's own home. Also, legislative impact, some Governments have halted such work under measures introduced to contain the pandemic.

Janssen UK have aimed to double the funding they usually provide to community organisations. They have made funds available for core funding and to support organisational infrastructure, they are keen to ensure that the pandemic doesn't under the hard work of the sector.

Other health conditions

RSV (Respiratory syncytial virus)
A very common virus that leads to mild, cold-like symptoms in adults and older healthy children. It can be more serious in young babies, especially those in certain high-risk groups. Janssen are exploring the same technology they have used with HIV and Ebola to produce a vaccine, using another virus as the delivery method.

They aim to start phase III trials at the start of the RSV season (October to spring), they are concerned about impact of the COVID-19 pandemic. Southern hemisphere season would start next year as their winter begins. Also looking at an RSV fusion inhibitor being brought to market for people where a vaccine won't work.

Other developments
Ebola vaccine approved, also working on E.Coli and HPV.
Janssen are looking to find a drug that works earlier in the influenza replication cycle, hopefully will initiate a phase III trial later this year if the pandemic allows.

Hepatitis B
Janssen are continuing to add HBV trials to their portfolio, in the last year four have been added. They have been looking at 'immune tolerant' people, who have high viral loads (much higher than seen in primary HIV infection), these people are often missed in treatment guidelines in the West. They have a high percentage of HBV protein plasma, limited impact to the liver etc.

When people are treated with tenofovir it is not sufficient enough to get them to undetectable HBV, an immune response is needed to eradicate the virus. Big issue is safety, unexpected immune responses can lead to hepatic failure in people with HBV.

HIV

Currently Janssen have two trials underway for an HIV vaccine, the most advanced studies at the moment.

1. Imbokodo is looking at a vaccine in young women (18-35) in southern Africa. All the women have been administered the vaccine but results not expected until Q3 2021. Enrolment was completed before the pandemic so the study is not currently impacted.
2. Mosaico is underway in North and South America and Europe in MSM and trans people (18-60). This trial has been impacted by the pandemic and recruitment was stalled but has started again in some locations. Janssen anticipate a delay in reporting results.

The two studies are being conducted in different populations to take account of different subtypes and people affected by HIV. Imbokodo is looking at subtype C, prevalent in southern Africa. Mosaico is a broader vaccine. Having two studies with two populations will allow Janssen to compare the differences, biologically and socially. For example, there are differences in PrEP use between men and women, these trials will determine if the same applies to a vaccine.

Janssen are working on how to determine if people have an immune response or become infected with HIV. Vaccine sero-positivity profile similar to if you were exposed to HIV. The obvious difference would be an absence of HIV RNA. These tests have an impact of vaccine wrap-around costs, an implication of bringing a vaccine to market.

Efficacy rates aimed for are 50%-65%, UK-CAB members questioned this in comparison to other vaccines: vaccines for diseases like flu can go as low as 30%.

Janssen advised that once something is found to work they would then work to improve. They expect durability to be about five years.

Janssen worked with ViiV Healthcare on long-acting Cabotegravir and Rilpivirine injectable. Some people in the UK are using this via compassionate use programme. ViiV leading on bringing this to market and the drug is currently at initial stages of commissioning process in England.

Janssen advised their HIV drug Darunavir does not work against coronavirus. There was some early information from China that it could be used but was met with scepticism. They issued a notice to BHIVA and EACS to release a statement after some countries (Romania) started to stockpile it.

UK-CAB members had asked why a SARS-CoV-2 vaccine was being developed much faster than one for HIV. Coronaviruses have just one protein receptor and there's been one mutation found to date. HIV on the other hand is much more complex, highly protected and mutates rapidly and frequently. With HIV a mutation is likely at every replication.

Viral and cell fusion is also different in both viruses, and more complicated in HIV.