Review of: "[Short Communication] Measles: 1963-2023, Immunology of a Morbillivirus"

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Potential competing interests: No potential competing interests to declare.

Overall view:

When I started reading the article I was expecting an enjoyable paper for those who want to learn more about the immunology of measles, with a bit of the nice history behind it, which stems thousands of years ago. However, as I kept reading it, I found the text rather confusing, bringing more doubts on the subject than contributing to illustrate the reader.

The subjects are mixed along the text and are not presented in an easy, nice to read way. This should be improved. I suggest that the text should be made simple, for instance adding subtitles; these would make clear which is the subject that is focused on; so I suggest that you stick to the subtitles while writing (even if later you decide you want to remove them).

Some points of interest should be more deeply explored, such as the question of SSPE, a fascinating history, which was not actually approached in the text.

Below I pointed out some specific comments on the text:

virion particle containing a negative (-ve) sense single-stranded (ss)

The virion is actually composed of RNA and protein.

The methodology behind this is long known through active immune response induction causal of long-term immunogenic host responses and immunity to reinfection, indicated by the near eradication of this pathogen [9][10]

What do you mean by “methodology” here? In the sentence previous to this you were talking about MeV as vector or a potential oncolytic virus. The word “methodology” here does bring up uncertainty to the reader.

“…that were subsequently manufactured and designed to counter contain??? Varicella Zoster (VZV) virus viral antigen epitopes “

What do you mean? The vaccine containing VZV was a MLV designed to counter Varicella/Chickenpox.

Structure of Measles Virus

The MeV virion particle size is 15,894kb from the 3’ end of the -ssRNA strand.

The term “virion” refers to the complete, infectious viral particle. In your text you cite the size of the RNA strand, I believe. The short “-ssRNA” was not defined.

“… indicating that point mutations were comparable between other -ssRNA viruses, including poliovirus but also vesicular stomatitis virus (VSV) conferring resistance to monoclonal antibodies then [17].

I cannot see why you refer to monoclonal antibodies in this sentence.

“….More recently, in 2015, investigations occurred in Canada of specific MeV H1 and D8 strains[18]. Previously, 24 known genotypes had been sequenced. Indeed, in 2018, the MeV genotypes in global circulation decreased to 4 in 2018. These were denoted by two MeV strains (B3/D8) together with two others (D4/H1) globally during 2020 [19]. Out of these, two (B3/D8) are known to be endemic across six of the WHO regions” [

Whatever you are trying to say here is not clear. It begins with studies in Canada which you do not tell what were, then you talk about the 24 genotypes and then the four, and then you say these were “denoted by…” what do you mean? The paragraph does not seem clear.

“…Many viral protein point mutations can affect immunologically programmed responses to pathogens???. During 2009, as monoclonal research development???? continued, it could be seen??? that the MeV particle utilised one predominant receptor for what? discovered in 1993 (CD46) that could be predominantly blocked by either polyclonal or monoclonal antibodies akin to a pharmacological antagonist preventing cellular infection similarly to immunisation evoking an immune response…”

This paragraph does not bring any new information and is rather more confusing than enlightening. You mention research but do not provide data to show what were those mutations, where they interfere on the whatever stage of virus infection.

“…Since then, protein epitope prediction and molecular mapping have remained an ongoing development for the immune system to be trained to be more effective in responding. During a host immune response to pathogenic antigens (epitope peptide), fragments are presented and processed through type two types of Major Histocompatibility Complex (MHC type I/II) utilising antigen-presenting cells (APCs) including dendritic cells (DCs), monocytes and macrophages amongst a network of better-characterised immune system cells.

Here I believe you are mixing the presentation of antigens to the immune system and protein prediction and mapping, which as it is in the text, seem to be disconnected in this block of text.

Measles receptor-mediated infection:

“…In 2000, MeV eradication was indicated in the USA and remained a target by the WHO for eradication, with sporadic outbreaks occurring since.”?????

This sentence is out of the context that the subtitle proposes.

“...Measles particle virions...”

One should use virions only, not *particle* virions, because "*particle* virions imply in that one does not know what a virion is.

Recent diagnostics commonly used up to 5 days after infection are real-time polymerase chain reaction (rtPCR), whilst serology assays have been reviewed elsewhere available for MeV indicative of sensitivity of 90.6% but also 100% specificity to date [40]. More recent outbreaks of natural MeV infection (n=26) are indicative that T cell responses in other T cell subtypes are affected, as defined above. These are follicular T helper cells (T_{FH}), alongside at least four other key T cell phenotypes being T helper (T_H1 and T_H2), as well as T_{REGS}, with T_H17 cell reduction occurring [41].

The text is mixing subjects. This should be avoided. For example, in the paragraph above, it starts with diagnostic methods by rtPCR, then goes to serology, then goes to the T cell repertoire. As it is, this can be rather confusing for the reader.

Final opinion on the article:

I am sorry to say, but, in my opinion, the article needs a thorough re-writing before being subjected to consideration for publishing.