Scientific summary (Scientific report)

a.   What were the main scientific objectives of the grant?

The main objective of this project aimed to identify and validate metabolic markers associated with different pain presentations. Testing markers can also extend to study their relationships with osteoarthritis progression on Xrays and MRI.

b. What were the main scientific achievements of the grant? Your answer should be at least 200 words.

Using lipidomics, we have identified five lipids associated with persistent MSMP. We found that even after adjusting for covariates (i.e. age, sex, body mass index, physical activity, diabetes, total cholesterol) and multiple testing, HexCer (d18:1/24:0 and d18:1/22:0), and LPC (18:2 [sn2], 18:1 [sn1]), and 15-MHDA [sn1] [104_sn1]) were associated with lower risk of persistent MSMP (OR ranging from 0.22 to 0.33, per log pmol/ml increase, p≤1.94×10-3).

c. What problems, if any, did you encounter in achieving the project's objectives, and how did you address them?

Due to the pandemic, there was a bit delay from our collaborator in sourcing some reagents. We actively contacted international and national supplier, and got it sorted quickly.

d. Have you disseminated, or plan to disseminate, the results of this research? Please tell us about:

   • References for peer-reviewed papers that have been published (please provide pdf copies of papers if possible)
   We are now writing up the first paper about the lipids markers and persistent MSMP, which we expect to submit in September 2021.

   • Papers that have been submitted and/or accepted for publication
   Not yet

   • Meetings/conferences at which you have presented this research, or are due to present it (please provide abstracts if possible)
   We will also submit the abstracts to 2022 OAC, EULAR conferences.

   • Any other ways in which you may have disseminated the research, including to the public and the media (please provide urls to relevant press releases or media articles)
   We may disseminate our findings through our institutional media.