Minutes of the MATURA Patient Advisory Group (MPAG) – Twelfth meeting

PhD Pain Project
Zoom
10.30-12.00, 17th September 2020

Attendees:
Zoe Ide, Lead, MPAG Chair
Louise Boyce, Lay member of MPAG
Sonia Jeevanason, Lay member of MPAG
Gaye Hadfield, MATURA Project Manager, QMUL
Emily Harvey, Study Coordinator, QMUL
Dr Shafaq Sikandar, Versus Arthritis Fellow & Lecturer in Sensory Biology
Yasmin Antonelli, PhD student

1) Welcome

Gaye welcomed everyone to the meeting and introduced Dr Shafaq Sikandar (Skip) and Yasmin Antonelli to the MPAG members

Skip works within the Experimental Medicine & Rheumatology department as a basic science researcher. Skips specialises in pain, with previous research focusing on finding out how nerve cells signal pain, and looking at what goes wrong in chronic pain conditions.

Skip currently has a particular interest in Musculoskeletal disease, and trying to understand why chronic pain develops in patients with Rheumatoid Arthritis. Yasmin has been working throughout her Masters and internship looking at different molecules that are expressed in the joint tissue, and whether patterns are different in Rheumatoid Arthritis (RA) and Osteoarthritis (OA) patients

2) Pain study Q&A

The main proposal for the study is finding out why some patients with RA develop persistent pain, whilst others only experience pain when they have joint inflammation. The latter can usually be treated with anti-rheumatic drug and biologics. This leads to further questions to why pain persists when inflammation is controlled.

What is chronic pain, and how can it be tested?

Skip explained that when cells in the nervous system are repeatedly activated, they can become very sensitised and start sending pain signals without a painful stimulus. It is currently unknown what causes sensitised cells in patients with RA. The study will involve examining joint tissue for molecules, and matching them to pain reported by patients, to try and understand what is driving the chronic pain.

Skip described chronic pain as when patients are more sensitive to painful stimuli, or when non-painful events become painful, also known as Allodynia. The term Hyperalgesia is used to explain a lower threshold to pain. Standardised tests will used in this study to test Allodynia and Hyperalgesia.

Chronic pain can be hard to test as it can be intermittent, therefore the questionnaires will cover longer periods and include questions on pain, depression and anxiety. The longer people suffer from pain, the more comorbidities that person may develop. The study will try to identify which patients are likely to develop chronic pain from an early stage in their diagnosis.

How will you find out which patients will develop pain?

There is currently no biomarker for pain, therefore at the start of the study a comprehensive pain profile will be created for each participant by collecting data from tests and questionnaires. Following this, biopsy samples will be used to identify which patients have certain proteins, and see whether there is a correlation to how much pain the patient reports. If certain proteins are found to import pain, these will then be tested in animals

Are there any questionnaires which capture personality type, as this may affect how different patients perceive pain?

Questionnaires will be used that capture psychological aspects as well as pain activity. There will be four questionnaires used in the study.

What stimuli tests will be used in the study?

There is a test which uses pin pricks of various weights. Each pin prick used will be perceived differently, and the patient will be asked whether the pain is sharp or dull. Pain thresholds can be captured by analysing when a dull pain becomes a sharp pain. A pressure algometer is used to identify a pressure-pain threshold.

In the study summary, it says 75% of European RA patients report moderate-to-severe chronic pain in spite of controlled disease activity, how has this been calculated?

Skip explained that the data is from a European study done in 2016; 1,241 RA patients took part in a study where their disease activity was scored against the EULAR criteria, and the patients would describe their pain on a visual analogue score from 0-100. It became apparent that 75% of patients with low disease activity were still recording high levels of pain

Has anything been missed from the application which would capture the experience of living with pain?

Sonia suggested capturing the pain felt by patients when carrying out daily activities, such a getting dressed or carrying groceries. Skip explained this is covered by a physical activity questionnaire

At what time point in a patient's diagnosis will they be recruited to this study?

Patients will be recruited alongside the PEAC study, at the point when patients with recently diagnosed inflammatory arthritis start DMARD treatment. Assessments will be carried out at baseline, 6 months and 12 months. The 12-month data collection should be sufficient to conclude whether a patient has developed persistent pain.

Not all patients feel pain, and there is research being carried out in other disease areas investigating what gene mutation(s) cause this.

Louise gave examples of the pain she has experienced since her diagnosis (joint/mechanical/numbness/inflammation) and that she did not necessarily feel these in the first 12 months. She hopes the research will be extended to those with established disease.

What results are you aiming for, and how will they be used?

If a biomarker signature for chronic pain is found, this would be applied to bigger cohorts of patients with different diagnosis. Once the 'proof of concept' is approved, this could be used as a tool in Rheumatology clinics to identify patients who may develop chronic pain

Will the biomarker be based on biological factors only?

Biological factors also includes the biopsychosocial identifiers, such a personality traits. The pathotype will define the types of cells which are existing in the arthritis joint, however the anxiety or mental health of a patient will also have an impact on pain.

Is there any constructive feedback on the study proposal?

It must be considered that some of these tests may inflict additional pain onto patients so they must be informed of the benefits to these tests and why they are used.

Will patients be told not to take painkillers within a certain time prior to the visits?

Skip explained that this study does not interfere with the patients' treatment, the patients would take their medication as usual.

Would any MPAG members be interested in monitoring the results of this research if the application

It was agreed that the MPAG members would be happy to meet to review the results, and assess whether the research meets patient priorities. The review could be added to the agenda for the 6 monthly MPAG meeting.

How is pain tested on animals?

Skips explained that 'adoptive transfer' is used, where samples are taken from patients and injected into animals to assess how pain signals are fired, or how much pain they experience. In previous experiments, this has been carried out using samples from patients with secondary fibromyalgia. Immune cells from within the blood were injected into animals. The animals started to experience pain, therefore it could be analysed how the nerve cells reacted to these cells. A similar approach would be used in this study.

Are there any other applications ongoing?

An application will be submitted to NIHR (animal work will not be included) to request funding for a study which looks at whether using a nerve block would stop patients feeling joint pain. This would help discover whether the pain derives from the joint, or if it is from the brain. For example, patients with phantom limbs still suffer from chronic pain.

As there hasn't been much development in new pain treatments for decades, are you hoping this study will help towards research for new drug treatments, or to find out which licensed painkillers work best?

Skip explained the objective of the research is not to develop new medicines but to use current acute pain treatments earlier, in the hope this will prevent development of chronic pain

3) **3. AOB**

Gaye has been contacted by a GCSE Design and Technology student who will be creating a device to help RA patients. The student would like patients to complete a questionnaire, which Gaye will circulate to the group

Action: Gaye to distribute student questionnaire when available

Post meeting note: Gaye emailed the questionnaire to MPAG on 24th September 2020