A new digital platform (Curelator Headache™) to identify possible migraine triggers and warning signs in individuals and test triggers for causality

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Introduction

- The episodic, largely unpredictable, nature of migraine attacks implies they occur as a result of a complex interaction between an individual’s genetics and their personal environment.
- Many factors have been suggested as ‘trigger’, with evidence mostly based on retrospective collection of trigger data, analysis of population data or individual anecdotes (1-6). There are few studies using prospective collection of individuals’ trigger data and correlation to attacks (6).
- Individuals appear to be sensitive to different sets of triggers. In addition, ‘protective factor’ may at least partially counteract the effect of triggers.
- An approach is needed that objectively identifies important triggers and protectors for individuals with migraine. This requires prospective collection of data about the triggers and protective factors identified at the individual level, summarised for this group.

Curelator Headache Platform

Curelator Headache™ is a proprietary digital platform to collect daily data using mobile technology (currently iOS only and in English only), these data are then stored centrally in a secure database and statistically analyzed to identify individuals’ trigger-attack associations and propose ‘tests’ of trigger modifications.

Data entry interface

Curelator Headache includes a quick, easy to use, individually customised user interface which aims to give a high degree of adherence to compliance with many weeks of data entry. To enhance speed of use, text has been minimised by use of a novel ‘Visual Migraine Language’ which will be described elsewhere.

Testing

To test the data entry interface, 511 people with migraine were recruited on-line to use the pilot version of Curelator Headache for (initially) 90 days. Adherence to the protocol testing cohort

- The platform is extremely user friendly: a high degree of adherence to use and compliance with daily data entry have assessed, as has the ability to generate personal ‘trigger maps’. This requires prospective collection of data about when a trigger IS and IS NOT followed by an attack.

Conclusions and discussion

- Curelator Headache is a novel digital platform that allows individuals with migraine to discover their personal triggers and protective factors and eliminate factors that are not associated with their attacks.
- The platform is extremely user friendly: a high degree of adherence to use has been achieved with the initial prototype: significant improvements and support have been implemented in the commercial version.
- ‘Trigger maps’ are now being generated for those who used Curelator headache for 90 days.
- We expect that improved knowledge of potential triggers and protective factors will help individuals, and their clinicians, manage their migraine more effectively.

For further information see: www.curelator.com

Fig 1. Example of the full trigger map as delivered

Fig 2. The Curelator Headache Platform

Fig 3. Screenshoot of the data entry interface - headache info and triggers

Fig 4. Flow chart showing usage by 511 users in the initial prototype testing cohort

Fig 5. Compliance and adherence to Curelator Headache beta-version prototype

References