International Centre for Allied Health Evidence

University of South Australia

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iCAHE

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*i*CAHE JC Critical Appraisal Summary

Journal Club Details

Journal Club location	**BIRU - OT**
JC Facilitator	**Michael Snigg**
JC Discipline	**Occupational Therapy**
CAT completed by:	**MC**

Question

Not included.

Review Question/PICO/PACO

P: *TBI/ABI – subacute/ community(stroke if none available in ABI/TBI)*

I: *Interested in articles describing the impact, therapy approaches &/or treatment of anosmia.*

C: *No assessment / treatment of anosmia versus assessment / treatment and effective management of anosmia*

O: *To have better understanding around what is current evidence supporting assessment / treatment / management of anosmia. Interested in guidelines if available how to set this up for our patients in sub-acute in-patient and community outpatient setting.*

Article/Paper

Proskynitopoulos, P.J., Stippler, M. and Kasper, E.M., 2016. Post-traumatic anosmia in patients with mild traumatic brain injury (mTBI): A systematic and illustrated review. Surgical neurology international, 7(Suppl 10), p.S263.

Please note: due to copyright regulations CAHE is unable to supply a copy of the critically appraised paper/article. If you are an employee of the South Australian government you can obtain a copy of articles from the DOHSA librarian.

Article Methodology:

Systematic review

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CONTACTS
www.unisa.edu.au/cahe
iCAHE@unisa.edu.au
Telephone: +61 8 830 22099
Fax: +61 8 830 22853

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Adelaide SA 5001
Australia

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Ques No.	Yes	Can't Tell	No	Comments
1	✓			**Did the review address a clearly focused question?** In this paper, we conducted a comprehensive and systematic review of the existing literature for the association between mild TBI (mTBI) and OD in order to examine their relationship, focusing on its neurosurgical management and the radiographic characteristics.
2	✓			**Did the authors look for the appropriate sort of papers?** We reviewed MEDLINE, PSYINDEX, PsycINFO, and PsycARTICLES. We selected the following search terms and applied them to the publication abstracts: Traumatic brain injury, TBI, head trauma, post-traumatic, posttraumatic, olfactory dysfunction, olfactory impairment, anosmia, hyposmia, or olfaction disorder. These terms were combined using the Boolean algorithm terms "AND" and "OR" to retrieve pertinent study titles of reports and abstracts: (Traumatic brain injury OR TBI OR head trauma OR posttraumatic OR post-traumatic) AND (olfactory dysfunction OR olfactory impairment OR anosmia OR hyposmia OR olfaction disorder). Inclusion criteria were: Clinical cohort studies, trials or case reports, trauma assessment, and the use of a specific evidence-based olfaction test, and report on the use of employed imaging techniques. *Of note, the review did not include search terms specific to neurosurgical management despite the focus of the review.* **Is it worth continuing?** **YES**
3	✓			**Do you think the important, relevant studies were included?** In the end, ten articles fulfilled our selection criteria, and of those nine were full text articles, which are presented in Table 1. Of the 56 rejected studies, 33 did not fulfill more than one criterion. Forty three out of the 66 studies did not differentiate between the different TBI types. Twenty out of the 66 studies did not report any imaging data. Three out of the 66 studies did not report mTBIs (3 studies) and five studies did not have a trauma assessment at all. A summary of these findings is provided in Table 1. *Review Table 1. Look at the studies included and look at the 'Imaging technique and diagnosis' to see how the authors diagnosed TBI. Also look at suitability of 'Olfactory tests and scores'. Of note, Table 1 does not report on any neurosurgical outcomes. Plausible that exclusion of these search terms prevented review from completely answering research question. Questions posed within the discussion could potentially have been partially answered if 'neurosurgical' search terms were included.*
4			✓	**Did the review's authors do enough to assess the quality of the included studies?** *No critical appraisal of included articles. No identification of articles' limitations.*

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5		N/A		**If the results of the review have been combined, was it reasonable to do so?** *Not applicable. Results have not been pooled.* *However, summary recommendations are made on page S273, 'A possible treatment algorithm: Summary of the evidence found'. Recommendations have not been linked to specific findings from specific articles, rather the recommendations are guidelines. The recommendations appear appropriate but your club's expertise will be able to better assess appropriateness, e.g. linking recommendations from the reviewed articles.*
6				**What are the overall results of the reviews?** Based on the theoretical background presented above and the results of our review, we would suggest a treatment algorithm [Figure 4] for all patients that report to a hospital after sustaining a TBI, especially if the assessment is not emergent. First, we recommend that, in each initial neurological examination, OF should also be grossly examined (e.g., with the use of the SST which is simple and has a high validity and reliability).[20] If a patient is found to be impaired in his/ her olfactory sense, an MRI is indicated to identify any underlying pathology, which might allow enrolling the respective patient for any trial for potentially helpful further treatment. Apart from clinical testing, MRI in combination with SPECT has high specificity and sensitivity for detecting OD.[3] If imaging diagnostics show no evidence of neural impairment, we propose that the patient should be tested again and, if positive, be sent to a special clinic for further diagnostics. If the MRI is positive, different questions need to be raised; is a neurosurgical intervention indicated and do the trauma guidelines prohibit the use of steroids? In general, if the MRI imaging shows evidence of an underlying neurological impairment, an olfactory test such as the SST or UPSIT should be used to quantify the OD. Another question needs to be raised if a neurosurgical intervention is indicated. Following the identification of post-traumatic OD, specific treatment should be initiated and may possibly even include steroids such as prednisolone, which is otherwise not routinely considered in TBI but which was shown to have significant effects on OF recovery rates and may minimize any further decline of OD and facilitate regeneration. Because the trauma guidelines do not categorically prohibit the use of steroids, drugs such as 30–60 mg of prednisolone could be administered in such circumstances. Following treatment, repeat imaging using MRI at three and 12 months could be performed to analyze post-traumatic evolution of affected areas and to study if any of the regions associated with olfaction show some signs of structural regeneration. *Treatment algorithm (Figure 4) p. S274.*
7				**How precise are the results?** *Not applicable.*

8	Journal Club to discuss	**Can the results be applied to the local population? Choose relevant context issues. The following are only suggestions to prompt discussion.** **CONTEXT ASSESSMENT** – *Infrastructure* – *Available workforce (? Need for substitute workforce?)* – *Patient characteristics* – *Training and upskilling, accreditation, recognition* – *Ready access to information sources* – *Legislative, financial & systems support* – *Health service system, referral processes and decision-makers* – *Communication* – *Best ways of presenting information to different end-users* – *Availability of relevant equipment* – *Cultural acceptability of recommendations* *Others*
9		**Were all important outcomes considered?**
10		**Are the benefits worth the harms and costs?**
11		**What do the study findings mean to practice (i.e. clinical practice, systems or processes)?**
12		**What are your next steps?** ***ADOPT, CONTEXTUALISE, ADAPT*** **And then (e.g. evaluate clinical practice against evidence-based recommendations; organise the next four journal club meetings around this topic to build the evidence base; organize training for staff, etc.)**
13		**What is required to implement these next steps?**

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