

Effectiveness of music therapy as prophylactic treatment for children with migraine headache

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Background

- Headache is one of the most common somatic disorders schoolchildren suffer from.
- Prevalence of persistent or recurring headache in schoolchildren is rising, around 8% of children starting school need treatment.
- Children with migraine experience psychiatric distress such as anxiety and depression.
- Migraine headaches have a high risk of chronification - for 60% of the children and adolescents migraine headaches persist in adulthood, in cases of comorbidities the risk rises up to 85%.

Objectives

- Aim of this study was to evaluate the effectiveness of music therapy versus drug and placebo treatment in children with migraine headaches.
- An evaluated musictherapeutic concept for adults with chronic pain has been adapted to the requirements of child treatment.
- As preventive drug we used Petadolex®, which proved effective in adult migraine interval treatment.

Treatment

- Treatment duration was 3 months
 music therapy: 12 weekly sessions music therapy
 Petadolex®/placebo: medication dosage was adjusted to age and response (children aged 8-9 yrs: 2x1 capsulas (25 mg), children aged 10-12: 2 x 2 capsulas per day; in case of no response: increase of dosage to 3x1 and 3x2 capsulas per day respectively).

Methods

- A randomized, placebo-controlled, three-armed parallel group design was used, the two drug arms were double-blind.
- 58 children (aged 10,4 ± 1,4 years) were included in the trial (after diagnosis, baseline and informed consent)
- Due to drop out group sizes decreased in postline to n = 18 music therapy, n = 19 Petadolex®, and n = 19 placebo, and in follow-up to n = 17 music therapy, n = 15 Petadolex® and n = 18 placebo.

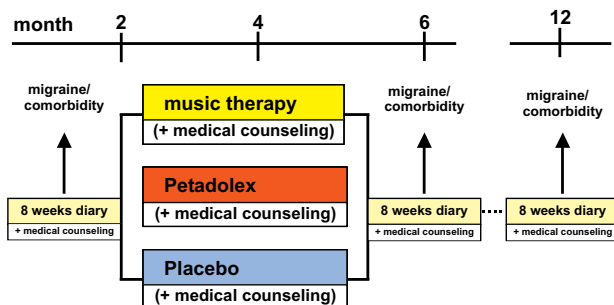


Figure 1: Research design

- Target variables were headache parameters (obtained through a headache diary), but also psychological factors (obtained through interviews and psychological questionnaires).
- Data have been collected through pre-post measurements, process measurement daily (+8 weeks baseline and postline), as well as follow-up after 48 weeks.

Results

Progression of frequency of attacks per treatment

- Locally weighted regression revealed a strong initial expectancy and counseling effect for all three groups which wears out after some weeks in baseline
- During therapy and follow-up the treatment groups proceed differentially as shown in figure 2:

the music therapy group shows an additional benefit during therapy which remains stable until follow-up.
 for the Petadolex® group there is no relevant benefit during therapy but a distinct improvement in postline and follow-up.
 for the placebo group there is no additional benefit during therapy but a slight improvement in postline and follow-up.

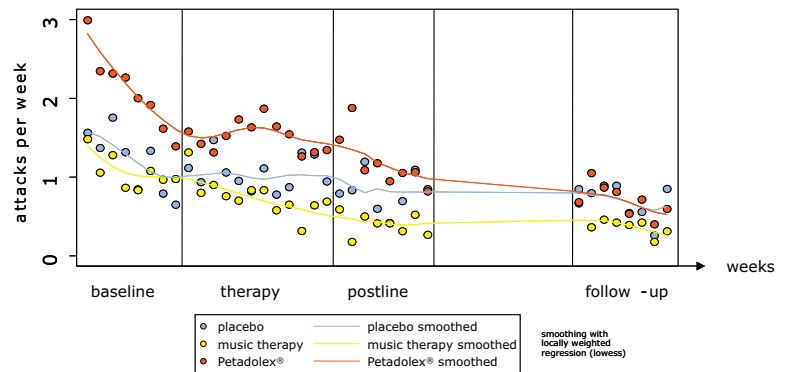


Figure 2: Progression of frequency of attacks per treatment

Relative reduction of frequencies of migraine per month

- Reduction pre-post:
 placebo med=31%, music therapy med=71%, Petadolex® med=43%.
- Reduction pre-follow-up:
 placebo med=31%, music therapy med=77%, Petadolex® med=73%.

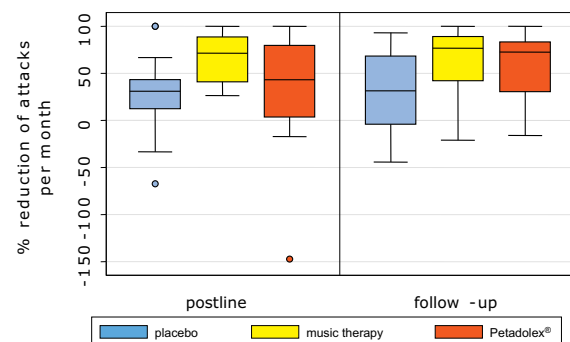


Figure 3: Effects of treatment on frequency of migraine attacks

Robust regression estimates for relative reduction of migraine attacks

- Due to outliers (fig. 2) treatment effects were estimated by robust regression analysis.
- Results of Wald-tests on estimated regression coefficients reveal significant group differences pre-post ($F(2,52)=4.90$, $p=.011$) and pre-follow-up ($F(2,47)=3.54$, $p=.037$).

Conclusion

Results suggest that music therapy and Petadolex® are effective prophylactic treatment methods for pediatric migraine, while music therapy has the additional benefit of an earlier symptom reduction.