

Receptive music therapy and salivary histamine secretion

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Abstract

Introduction Receptive music therapy (rMT) not only provides a good feeling but also a more effective healing process and mastery of stress.

Methods and Results In a preliminary study it could be shown that American Doudouk-music (feel-good music) suppressed salivary histamine secretion in two groups ($n = 4$) of allergic and non-allergic young volunteers. Stress was induced by eating adverse food/allergenic food during music exposure. There was no response in the vein blood samples and no significant difference between the allergic and non-allergic groups.

Conclusion It can be concluded that saliva is an appropriate medium for histamine measurements during music exposure.

Keywords Receptive music therapy · Histamine · Saliva · Allergy · Stress mastery

Introduction

Recently, we described the effect of receptive music therapy (rMT) on the secretion of histamine into the blood of atopic and non-atopic young students [1]. It was proposed that specific music can be defined as “feel-good music”,

which influences potential anxiety and stress-derived emotions [2]. It is still unclear whether music can affect neurogenic reactions and especially immuno-histaminergic and histamine secretory processes [3, 4]. Several of the volunteers in the present study suffered from psychogenic stress before and during blood drawing. Therefore, from these volunteers, histamine secretion was measured in mouth saliva.

Materials and methods

Two matched controls [two atopic (A), total IgE > 500 IU/ml, typical acute and chronic allergic symptoms including atopic eczema and asthma; two non-atopic (NA), total IgE < 50 IU/ml; ages 21–32 years, female] were exposed through an individual headset to “feel-good music” for 5 min twice as described previously [1]. During one rMT session, an “adverse food” such as fish and vegetables was eaten. It was usually rejected by the test persons.

Saliva was collected from the mouth before and after music exposure. Histamine and secretory saliva antibodies (sIgA) were determined using the ELISA technique (IBL Hamburg). Histamine in saliva and plasma was additionally measured by routine (OPD-)fluorimetry after HPLC. The average of double values (two test groups, $n = 2$) was calculated.

Results and discussion

Salivary histamine was found to be in the range 0.31–12.4 ng/ml as determined by fluorimetry after HPLC [1]. Plasma histamine values were in the range 0.2–1.2 ng/ml. There was a good correlation between the fluorimetric and

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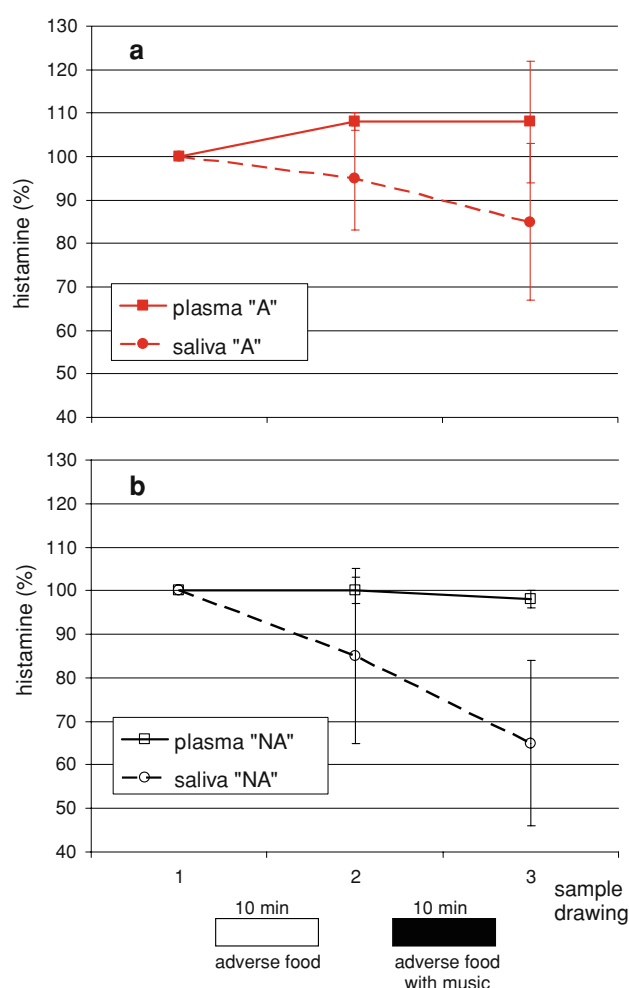


Fig. 1 Histamine secretion in the saliva and plasma of **a** atopic (A) and **b** non-atopic (NA) young students after exposure to “adverse food” and “feel-good music”. Two atopic patients with typically acute and chronic allergic symptoms such as eczema and asthma, total IgE 996 IU/ml and 637 IU/ml, respectively and two non-atopic matched controls, total IgE < 50 IU/ml, age 21–32, females were exposed for 5 min to “good feeling music” as described in “[Materials and methods](#)”. During the rMT, fish or Brussel sprouts were eaten as “adverse foods”. These foods were particularly rejected by the test subjects. Saliva was collected from the mouth and blood was drawn from the arm vein before and after music exposure. In three cases, “good feeling music” was defined to be slow romantic modern ballads. One test subject preferred classical music by Mozart. Histamine was measured as described in “[Materials and methods](#)” [1]; Average values, $n = 2$

the ELISA histamine determinations ($R^2 = 0.75$, $n = 8$). Similar data were obtained on repeating the experiments in the reverse order, i.e., starting with adverse food and music exposure followed by music alone. There were no significant differences in the measured histamine concentrations between the A and NA test subjects (data not shown).

The levels of salivary, but not plasma, histamine were suppressed in both A and NA test groups following individual headset exposure to “feel-good music” (Fig. 1). Concentrations of sIgA were in the range 130–250 ng/ml and did not change in the course of the experiments. There were no differences between the A and NA matched controls. As described previously, pulse rates were significantly reduced in all experiments after exposure to “feel-good music” [1]. The same effect was observed when the pulse rate was elevated after eating the adverse food. It remains unclear whether active music therapy (aMT) and/or other meditative clinical treatment techniques are more effective than rMT [5, 6]. This also applies to the relevance of immune responses such as the levels of sIgA.

It can be concluded that the measurement of histamine in saliva is an appropriate tool for assessing the response of individuals to the physiological effects of rMT.

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