

Case Report

Title

Oxytocin Release during KAI-ZEN SO-AM Meditation

Author

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Abstract

Oxytocin (OT) is a peptide and neuropeptide constructed with nine amino acids synthesized in the hypothalamus and stored and released from the posterior pituitary. In this report, meditation associated with appreciation and compassion is thought to release oxytocin. KAI-ZEN (Pleasant Zen) SO-AM meditation (SO-AM) is a simple breathing-imaging-mantra technique developed by UNI H&H Graduate University. Salivary oxytocin levels were measured in 10 participants before and after KAI-ZEN SO-AM meditation. Salivary oxytocin levels were significantly increased after KAI-ZEN SO-AM meditation from $70.06 \text{ pg/ml} \pm 7.62$ to $97.3 \text{ pg/ml} \pm 14.09$ ($M \pm SE$, $n=10$, $p < 0.05$) Even though sample size is small, KAI-ZEN SO-AM meditation stimulated endogenous oxytocin release.

Introduction

OT is thought to be a female-exclusive hormone responsible for reproductive systems such as labor and delivery and lactation. However, recent studies illustrate that OT is present in both male and female and plays important role in various physical and mental health benefits^[1]. Meditation has been popularized to induced similar health benefits including stress reduction and decreased anxiety and depression^[2]. Although the mechanism of meditation-induced health benefits remains unclear, one study illustrates that meditation associated with appreciation and compassion induced the release of

salivary OT^[3]. Moreover, salivary OT levels and plasma OT levels are linked^[5]. Therefore, it is hypothesized that SO-AM induce hypothalamic OT release.

UNI H&H Graduate School developed KAI-ZEN SO-AM meditation which is a simple breathing-imaging-mantra technique. Participants are asked to perform the following instructions in SO-AM. 1) sit straight up in a chair 2) breathe in through nose for 3 seconds and exhale through nose for 6 seconds. 3) imagine sunrise from the bottom of the spine to the top of the head while inhaling. 4) imagine the full moon setting from the top of the head to abdominal area while exhaling 5) while performing 3), internally recite the word SO.6) while performing 4), internally recite the word AM. 7) having the feeling of appreciation and compassion while performing entire time.

Material and Methods

1. Subjects

10 health subjects (4 males and 6 females, mean age; 35) were recruited for SO-AM.

2. Practice of SO-AM

Subjects are asked to perform SO-AM for 15 minutes.

3. OT assessment

Before practicing SO-AM, each subject was asked to collect the saliva(0.5 mL). SO-AM was performed for 15 min in total. Immediately after finishing the SO-AM, another sample of saliva was collected into the tubes. These tubes were then immediately kept at -20°C until the assessment. OT levels in saliva were measured by enzyme-

linked immunosorbent assay (ELISA) using the OT ELISA kit (ADI- 900-153A, Enzo Life Sciences, Farmingdale, NY) , following the manufacture’s instructions. The plate was read on a microplate reader (Molecular Devices SpectraMax Plus384) at an optical density of 405nm. Sensitivity of this assessment is 15-1000 pg/ml according to the manufacture.

Results

OT levels before and after SO-AM showed improvements from $70.06 \text{ pg/ml} \pm 7.62$ ($M \pm SE$, $n=10$) to $97.3 \text{ pg/ml} \pm 14.09$ ($M \pm SE$, $n=10$, $p=0.009$).

OT levels were increased in 7 out of 10 subjects following SO-AM. One minor increase (less than 10 percent from the pretreatment levels) was observed. Major increase (more than 30 percent from the pretreatment levels) was observed in 6 subjects.

On the other hand, the reduction of OT levels was observed in 3 subjects following SO-AM. Two minor reductions (less than 5 percent from the pretreatment levels) were observed and 1 major reduction (more than 20 percent) was observed (Figure 1).

Discussion

Even though the sample size in this case report is limited, practicing SO-AM for a short period of time increases OT levels in most subjects. The participants with major increase in OT levels have previous practices of SO-AM (3 months or longer) while reduction group have no or little experience with SO-AM. However, change in OT levels is not associated with age and/or sex.

Mechanisms and effects of OT must be further investigated.

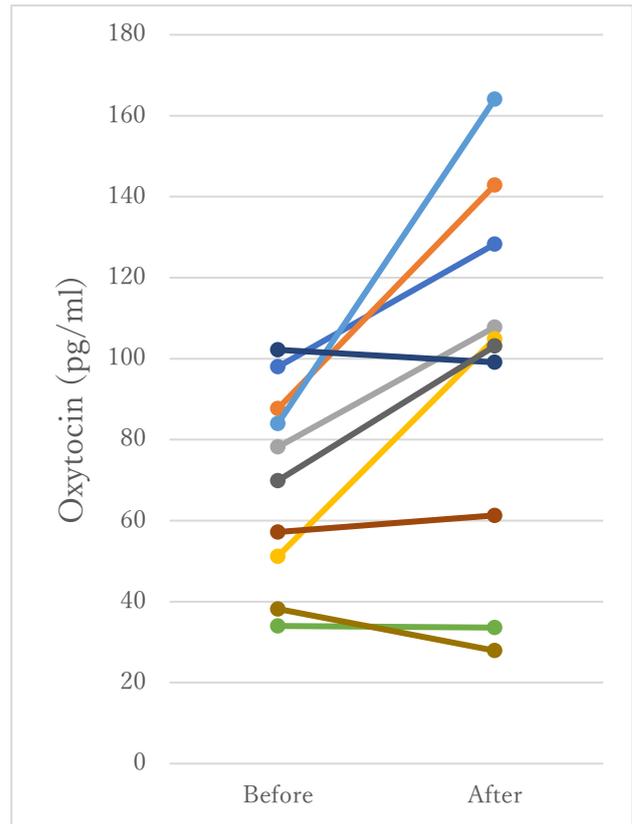


Figure 1. Salivary OX levels were significantly increased after SO-AM from $70.06 \text{ pg/ml} \pm 7.62$ to $97.3 \text{ pg/ml} \pm 14.09$ ($M \pm SE$, $n=10$, $p < 0.05$)

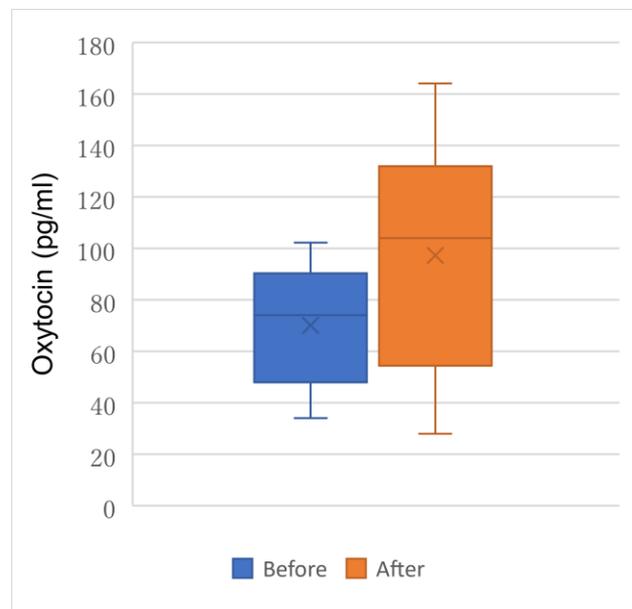


Figure 2. Whisker-plot graph of salivary OT before and after SO-AM ($n=10$)

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