The effect of CAM Vision Stimulator in the treatment of amblyopia in Gaza Strip

Prepared by
Optom. Enas Zaki El Bashiti
Manager of Vision Optics Centre
Optometrist in European Gaza Hospital
2013-2014
Introduction

Recent *neurophysiological* findings suggest that visual neurons in the visual areas of the brain can be activated by different spatial frequency gratings and to exercise the majority of visual cells, the stimulus should contain high contrast gratings at all orientation.
Basing on this, Campbell group (Banks R.V. Campbell F.W., Hess R.F. and Watson P.G.) have devised an apparatus as a new treatment for amblyopia, marketed by Clement Clarke as Cambridge vision stimulator popularly known as "CAM VISION STIMULATOR"
**Definition**

*CAM Vision Stimulator* contains a motor which slowly drives a turntable at a speed of 1 cycle per minute, on which can be fixed a series of discs bearing patterns of spatial frequency gratings, as also a slot for inserting transparent perspex plates with coloured patterns.
Our experience with CAM Therapy in Gaza Strip

In order to test the efficacy of the CAM Vision Stimulator, 31 patients of amblyopia were examined and treated in Vision Optics Centre of Khanyounis city, each having at least 2 lines of amblyopia.
Our experience with CAM Therapy in Gaza Strip

- All patients should be refracted under cycloplegia and a full correction is ordered.

- A fundus examination is also carried out and only those with normal fundi are included.

- Any glasses that had been prescribed are worn for at least 10 days before CAM treatment is started.

- Complete orthoptic examination is carried out in each patient before and after finishing CAM treatment.

- At each CAM session visual acuity is tested before and after treatment using linear method.
Our experience with CAM Therapy in Gaza Strip

- The treatment are repeated at intervals which can be as short as daily or as long as weekly.

- It is usual to do the treatment frequently initially, and lengthen the interval between treatment as the visual acuity improves.

- Treatment is discontinued if no further improvement of visual acuity occurs on 5 sessions.

- Those who respond well to this treatment usually do so within the first two or three treatment.

- No occlusion is necessary in between treatments.
Discussion

- **31** patients of amblyopia
- Age was range from **4** years to **16** years
- **16** patients are Female, **15** patients are Male
- **10** patients were newly referred, **21** patients have some previous treatment i.e. (patching, glasses, squint surgery)
- Sessions number was range from **5** sessions to **15** sessions
- Period of CAM therapy for each patient was range from **2** weeks to **2** months
11 patients under age of 8 years

High improvement 72.72%, Moderate improvement 9.09%, Mild improvement 18.18%
20 patients over age of 8 years up to 16 years

High improvement 45%, Moderate improvement 35%, Mild improvement 10%, No improvement 10%
11 patients of Aniso-hyperopic amblyopia & 1 pt. Aniso-myopic amblyopia

High improvement 58.33%, Moderate improvement 25%, Mild improvement 16.66%
High improvement 87.5%, Mild improvement 12.5%
4 patients of Bilateral Ametropic Amblyopia

Pre CAM V.A.

0.3

0.8

0.5

0.9

1

High improvement 75%, No improvement 25%
High improvement: 50%, Mild improvement: 50%
7 patients of Mixed Amblyopia

High improvement 28.57%, Moderate improvement 28.57%, Mild improvement 14.28%, No improvement 28.57%
16 patients have previous patching treatment

High improvement 43.75%, Moderate improvement 18.75%, Mild improvement 25%, No improvement 12.5%
3 patients have previous squint surgery treatment

Moderate improvement 66.66%, No improvement 33.33%
Benefits of CAM Vision Stimulator

We noticed the effectiveness of CAM therapy and we have also agreed with the studies published globally regarding this treatment:

- CAM Vision Stimulator method being simple and exercises being interesting, even the very young children co-operate well.

- We have noticed a marked improvement and in different proportions in Strabismic and Aniso-(hyperopic, myopic) Amblyopia.

- Even patients with eccentric fixation improves.

- CAM treatment for bilateral amblyopia also achieve satisfactory improvement.
Benefits of CAM Vision Stimulator

✓ Patients of age over than 8 years up to 16 years also response well to CAM.

✓ Patient who have previously failed to respond to conventional occlusion therapy have shown good response to CAM.

✓ Patients who have previous squint surgery have shown mild to moderate improvement.

✓ Even those who have mixed amblyopia response well.

✓ The course of treatment is very short 10 minutes per session and only 5 to 15 such sessions.

✓ The need for long periods of occlusion, with all its attendant social and educational disadvantages is avoided, especially those of school age children.
THANKS