Medical Cannabis Care

November 2019
Alon Blatt
Our Agenda for Today

1. Brief History
2. Our experience
3. NiaMedic Healthcare & Research services
4. EndoCannabinoid System Overview
5. Pain and Cannabis
6. Research.
Brief History: Early Records

- Earliest written references was in 1500BC, in the Chinese Rh-Ya pharmacopeia
- Evidence of use in ancient Greece and Muslim empires
- Evidence of use by queen Victoria for menstrual cramps

The founding fathers of the United States used to grow Hemp

In 1619 the Virginia Assembly passed legislation requiring every farmer to grow hemp.

Circa 1850
- Alcoholism
- Cholera
- Menstrual bleeding
- Gout
- Incontinence
- Leprosy
- Nerve pain
- Opiate addiction
- Seizures
- Tetanus

Our experience

2009 - “Hadarim” project

World first study on the use of medical cannabis with seniors

Common geriatric conditions:

- Pain
- Spasticity
- Agitation

2010 - First medical-cannabis focused nursing clinic

➢ Collaboration with “Tikun Olam”
➢ Effects of different strains on different diseases
➢ Positive results: decrease in pain and improvement in quality of life

Common geriatric conditions:

- Insomnia
- Decreased appetite
- POLYPHARMACY

Epidemiological Characteristics, Safety and Efficacy of Medical Cannabis Use

Libbi Bar-Lev Schleider MA, Raphael Mechoulam PhD, Inbal Sirovitz RN, Timna Naftali MD, Zvi Bentwich MD, Victor Novack MD PhD.
NiaMedic - Overview

➢ Target population - age 65 and up.
➢ Specialists clinic.
➢ Full geriatric assessment: cognitive, mental and functional status
➢ Comprehensive medication assessment by a pharmacist
➢ Personal patient-therapist relationship
➢ Risk management programs
➢ Supporting Nursing and retirement homes.
Geriatrics - internal diseases, cognitive functions, behavioral and mood disorders, nutrition, sleep disorders and other geriatric syndromes.

Pain - Chronic pain, neuropathic pain and rheumatic pain.

Neurology - Parkinson's Disease, spasticity and movement disorders, Tourette's, Multiple Sclerosis, ALS and Epilepsy.

Rheumatology - Rheumatoid arthritis, arthritic, polymyalgia rheumatica and fibromyalgia

Orthopedics - Spinal stenosis, fractured discs and joint replacements.

Pain-Rehabilitation medicine - functional aspects.
Patient’s Process

• Phone screening
• Collection of patient’s medical history
• Visit:
  • Comprehensive assessments
  • Complete medical/geriatric evaluation
  • Customized MC treatment plan – 4 factors
• One month of case management
• Referring physician receive patient’s treatment summary
# PRACTICAL APPROACH TO CANNABIS TREATMENT IN OLDER ADULTS

<table>
<thead>
<tr>
<th>Symptoms assessment</th>
<th>Chronic pain, Parkinson's disease, sleep disorders, anorexia, PTSD, spasticity and palliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider relative contraindications</td>
<td>Severe cardiovascular diseases, psychotic comorbidities, history of addictions, gait instability</td>
</tr>
<tr>
<td>Risk-benefit analysis</td>
<td>Failure/intolerance of previous treatments; open discussion with patients and caregivers</td>
</tr>
<tr>
<td>Choice of cannabinoids content</td>
<td>THC and CBD combo: non-neuropathic chronic pain, anorexia, spasticity, Parkinson's disease and palliation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment initiation</th>
<th>Start low, go slow; sublingual route is preferred. Begin with low doses and slowly titrate (see Figure 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring</td>
<td>Assess adverse events and treatment efficacy</td>
</tr>
<tr>
<td>Polypharmancy evaluation</td>
<td>Consider necessity and dosing of all medications, especially analgesics</td>
</tr>
</tbody>
</table>

# NERVEember

www.InternationalPain.org
EndoCannabinoid System Overview

➢ One of the most important physiologic system involved in establishing and maintaining human health

➢ The main goal of the system is homeostasis, the maintenance of a stable internal environment

➢ Autophagy – a process in which a cell isolates parts of its contents to be self-digested and recycled. The process is mediated by this system
Endocannabinoids are created in response to needs within the larger physiological system and are largely understood to be used for the body’s regulatory functions.

These mechanisms are predominantly responsible for communication within the body to best regulate various biological responses.
EndoCannabinoid System Overview

Endocannabinoids vs. phytocannabinoids

- Phytoannabinoids mimic the behavior of endocannabinoids and interact with the cannabinoid receptors
- Phytocannabinoids can encourage the body to create more naturally occurring endocannabinoids and their receptors
Common Symptoms & Cannabis

**Chronic pain** – considered to be not just a symptom but an actual disease

Types of chronic pain:

- **Neuropathic** – diabetic, nerve damage/pressure, post-chemo
- **Orthopedic** – disc herniation, spinal stenosis, bone fractures and osteoporosis
- **Rheumatic** – arthritic, polymyalgia rheumatica and fibromyalgia

Medical cannabis help with: **pain intensity & perception of pain**
Amygdala activity contributes to the dissociative effect of cannabis on pain perception

Michael C. Lee a, d, Markus Ploner a, b, Katja Wiech a, Ulrike Bingel a, c, Vishvarani Wanigasekera a, Jonathan Brooks a, David K. Menon d, Irene Tracey a
Randomized controlled trials compared selective cannabinoids (dronabinol, nabilone, nabiximols) with conventional treatments or placebo in patients with chronic NP.
### Table 3. Summary of Evidence for the Harms of Cannabis in Chronic Pain and General Adult Population

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Studies</th>
<th>Strength of Evidence*</th>
</tr>
</thead>
<tbody>
<tr>
<td>General AEs</td>
<td>2 systematic reviews (10, 11) and observational study of chronic pain (50)</td>
<td>Low</td>
</tr>
<tr>
<td>Motor vehicle accidents</td>
<td>Meta-analysis (51) of 21 observational studies; combined N = 239,739</td>
<td>Moderate</td>
</tr>
<tr>
<td>Mania</td>
<td>1 meta-analysis (63) of 2 prospective studies</td>
<td>Low</td>
</tr>
<tr>
<td>Psychosis</td>
<td>1 systematic review (64); 8 studies (63, 71, 74) including patients without psychiatric symptoms at baseline: 3 low ROB, 3 medium ROB, 2 high ROB</td>
<td>Low</td>
</tr>
<tr>
<td>Cognitive effects</td>
<td>2 systematic reviews (72, 73)</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

- **Cannabis based treatments associated with higher overall risk for short-term, non-serious AEs.**
  - Increase in collision risk (OR: 1.35 [95% CI, 1.15-1.61]).

- **Increased incidence of new-onset mania symptoms among populations without diagnosis of bipolar disorder (OR: 2.97 [95% CI, 1.80-4.90]).**

- **History of cannabis use associated with increased risk for psychotic symptoms.**

- **Active long-term cannabis use associated with small negative effects on all aspects of cognition.**
  - Mixed, inconsistent findings on long-term effects in past users.
Effect of Medicinal Cannabis Therapy (MCT) on Severity of Chronic Low Back Pain, Sciatica and Lumbar Range of Motion

Mustafa Yassin, Avraham Garti and Dror Robinson

Department of Orthopedics, Hasharon Hospital, Rabin Medical Center, Petah Tikwa and Sacker School of Medicine, Tel Aviv University, Israel

Corresponding author: Dr. Dror Robinson, Head Orthopedic Research Department, Hasharon Hospital, Rabin Medical Center, Keren Kayemet 7, Petah Tikwa, Israel; Tel: 972-3-9372233; Fax: +972-3-9372501; E-mail: drorG@gmail.com

Received date: October 10, 2016; Accepted date: November 21, 2016; Published date: November 29, 2016

Copyright: © 2016 Yassin M, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Results:

➢ BPI VAS decreased from 8.4 ± 1.4 to 2.0 ± 2.0
➢ SF12-PCS improved from 47 ± 14 to 55 ± 12
➢ Sagittal plane active range of motion improved from 34° ± 8° degrees to 48° ± 8°

The Anti-Inflammatory Properties of Terpenoids from *Cannabis*

Ruth Gallily, Zhannah Yekhtin, and Lumir Ondrej Hanus

Published Online: 8 Dec 2018 | https://doi.org.proxy.tau.ac.il/10.1089/can.2018.0014

Abstract

Introduction: Cannabinoids are well known to have anti-inflammatory effects in mammals; however, the Cannabis plant also contains other compounds such as terpenoids, whose biological effects have not yet been characterized. The aim of this study was to compare the anti-inflammatory properties of terpenoids with those of cannabidiol (CBD).
NAP Recommendations

There is substantial evidence that cannabis is an effective treatment for chronic pain in adults.
Common Symptoms & Cannabis

Sleep Disorder (Insomnia) - Very common and increase with aging

Sleep disorder is segmented into:

- Falling asleep
- Maintaining constant sleep and quality of sleep

Conventional medications leads to numerous side-effects and long terms adverse effects

Mostly through its effect on the central nervous system, cannabis helps with falling asleep (THC) and maintaining quality of sleep (THC & CBD)
Common Symptoms & Cannabis

Depression and anxiety – depression increases with age

- Symptoms of depression are:
  - Sadness
  - Lack of motivation
  - Insomnia
  - Decrease in appetite

Cannabis helps alleviate the symptoms of depression and anxiety by encouraging the body to produce serotonin, mimicking the calmness and euphoria effects of anandamide.

- Due to the mechanism of the endocannabinoid system, an incorrect treatment might cause worsening in those symptoms.
NiaMedic – Research Platform

➢ Clinical Research Services - CRO and site management services.
➢ Chief Science Officer - Prof. Victor Novack, MD, PhD

Collaborators:
➢ Prof. David (Dedi) Meiri - Technicon.
➢ Dr. Nirit Bernstein - Volcani Center.
➢ Soroka Hospital Clinical Research Center.
➢ UCLA - Cannabis Research Initiative
Article

Medical Cannabis for Older Patients – Treatment Protocol and Initial Results

Ran Abuhasira 1, Addie Ron 2, Inbal Sikorin 2 and Victor Novack 3,*

1 Cannabis Clinical Research Institute, Soroka University Medical Center and Faculty of Health Sciences, Ben-Gurion University of the Negev, Be’er-Sheva zip code 84105, Israel; ranahus@post.bgu.ac.il
2 NiaMedic Healthcare and Research Services, Bnei-Brak zip code 5126107, Israel; addie@niamedic.com (A.R.); inbal@niamedic.com (I.S.)
* Correspondence: victorno@clalit.org.il; Tel.: +972-8-6244240

Received: 07 September 2019; Accepted: 27 October 2019; Published: date
Assessment of pain intensity on a scale of 0-10 (VAS) at baseline and after 6 months of treatment

p<0.001 (N=32, Wilcoxon Signed Rank test)
Perception of the general effect of medical cannabis on the patients condition on follow-up

- Significant deterioration: 1
- Moderate deterioration: 1
- Slight deterioration: 2
- No change: 9
- Slight improvement: 7
- Moderate improvement: 11
- Significant improvement: 36

#NERVEember

www.InternationalPain.org
<table>
<thead>
<tr>
<th>Drug class</th>
<th>Stopped drugs Number of patients (%)</th>
<th>Reduced dose Number of patients (%)</th>
<th>Added a new drug Number of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opioid analgesics</td>
<td>18 (33.3%)</td>
<td>3 (5.6%)</td>
<td>1 (1.9%)</td>
</tr>
<tr>
<td>Other analgesics</td>
<td>10 (18.5%)</td>
<td>0 (0%)</td>
<td>1 (1.9%)</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>8 (14.8%)</td>
<td>3 (5.6%)</td>
<td>1 (1.9%)</td>
</tr>
<tr>
<td>Neuropathic pain</td>
<td>6 (11.1%)</td>
<td>3 (5.6%)</td>
<td>2 (3.7%)</td>
</tr>
<tr>
<td>SSRI or SNRI</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Antihypertensive</td>
<td>7 (13%)</td>
<td>2 (3.7%)</td>
<td>1 (1.9%)</td>
</tr>
<tr>
<td>Antidiabetic</td>
<td>3 (5.6%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Anti-psychotics</td>
<td>5 (9.3%)</td>
<td>2 (3.7%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Anti-emetics</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>All other drugs</td>
<td>15 (27.8%)</td>
<td>2 (3.7%)</td>
<td>5 (9.3%)</td>
</tr>
</tbody>
</table>

SSRI – Selective Serotonin Reuptake Inhibitor; SNRI – Serotonin Norepinephrine Reuptake Inhibitor
## Reported adverse events during 6 months of treatment

<table>
<thead>
<tr>
<th>Adverse event</th>
<th>% of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dizziness</td>
<td>11.9%</td>
</tr>
<tr>
<td>Somnolence</td>
<td>8.9%</td>
</tr>
<tr>
<td>Dry mouth</td>
<td>7.5%</td>
</tr>
<tr>
<td>Confusion and disorientation</td>
<td>7.5%</td>
</tr>
<tr>
<td>Psychoactive sensation</td>
<td>6.0%</td>
</tr>
<tr>
<td>Nausea</td>
<td>4.5%</td>
</tr>
<tr>
<td>Weakness</td>
<td>3.0%</td>
</tr>
<tr>
<td>Headache</td>
<td>1.5%</td>
</tr>
<tr>
<td>Any adverse event</td>
<td>41.8%</td>
</tr>
</tbody>
</table>
Thank you for listening!

Alon Blatt –
alon@niamedic.com
833-364-2633
www.niamedic.com