

Jean-Patrick BENIGNI\*  
Jean-François UHL \*\*  
André CORNU-THENARD\*\*\*



# CRITERIA FOR NON-COMPLIANCE OF MEDICAL COMPRESSION STOCKINGS

- \* HIA Bégin Saint Mandé, France
- \*\* Université des Saints Pères, Paris V, France
- \*\*\* Hôpital Saint Antoine Paris, France

# Criteria for non-compliance of MCS

- **Background**
  - Compliance of MCS estimated by doctors as poor < 70%
  - Few studies, mainly international  
Not generalizable (different standardizations)

# Criteria for non-compliance of MCS

- **Background**
  - In controlled studies
    - Compliance 90% in a month
    - 25 % with a follow up over 5 years




# Criteria for non-compliance of MCS

- Susan Kahn
- Compression stockings to prevent post-thrombotic syndrome: a randomized placebo-controlled trial
- MCS did not prevent PTS after a proximal DVT
- Compliance after 2 years : 45% of patients did not regularly wear MCS



# Criteria for non-compliance of MCS

**Causes of non-compliance**  
**Key publications**



# Criteria for non-compliance of MCS

- **Moffatt CJ.**
  - Reviewed data (10 studies) on the reasons why compression therapy (MCS and bandages) for the treatment of venous ulcers was unacceptable by patients
  - *Inapplicability, wear-comfort factors,*
  - *inefficacy,*
  - *feeling of constriction*

# Criteria for non-compliance of MCS

- **Raju CJ et al**
  - 3144 patients for 8 years
  - CEAP C<sub>0-2</sub> 67% C<sub>3</sub> 22% C<sub>4</sub> 4% C<sub>5</sub> 4% C<sub>6</sub> 3%
  - Only 21% used the stockings on a daily basis
  - 16% less often
  - 63% did not use the stockings

# Criteria for non-compliance of MCS

Could not state a specific reason	30%	Cosmetic, poor appearance 2%
Not recommended by doctor	25%	Aggravating, itching, dermatitis 2%
Ineffective, did not help %	15	Made symptoms worse 1%
Binding, cuts off circulation, poor fit	13%	Lack of self-discipline 0.5%
Too hot	7%	Cost considerations 0.4%
Soreness	2%	Work-related 0.2%
Needs application assistance	2%	



# Criteria for non-compliance of MCS

- Ziaja D et al.
  - 16770 patients with CVD used only by 25.6 %
  - Use increased with higher clinical stages of CVD
  - 5.3% of patients discontinued the use of MCS

# Criteria for non-compliance of MCS

- High cost
- Sweating, itching, exudation lesions
- Cosmetic reason,
- Edema exacerbation
- Application difficulty



# Criteria for non-compliance of MCS

- Reich- Schupke et al
  - 200 patients with CVD with a compression therapy time > 2 weeks
  - 110 returned questionnaires
  - > 60 years and BMI > 25 the help of another person to apply compression
  - BMI > 25 feeling of constriction

# Criteria for non-compliance of MCS

- **Finlayson K et al**
  - Psychosocial factors to influence compression therapy
  - 122 patients with a previous ulcer history
  - **The impact of nervous depression**

# Criteria for non-compliance of MCS

- **Allaert et al**
  - Compliance of MCS in 2265 patients
  - 36.6% wore MCS every day
  - Poor compliance
    - *Insufficient number of pairs of MCS in their disposition 24.5%*
    - *Difficulties putting them on 23.8%*
    - *Difficulties taking them off 14.5%*
    - *Insufficient feelings of improvement 9.1%*

# Criteria for non-compliance of MCS

- **Allaert et al**
  - **The prescribed number of pairs** plays a major role in the regularity of the port changes
  - It grows from 31.6% when insufficient to 78.0% when it is considered as sufficient.

# Criteria for non-compliance of MCS

- **Benigni et al**
  - Comparison between graduated MCS and progressive MCS
    - Progressive MCS were easier to putting on / taking off than graduated MCS

# Criteria for non-compliance of MCS

How to monitor compliance ?





# Criteria for non-compliance of MCS

- Wearing time of MCS by a patient cannot be controlled
  - It is related to what a patient says ...

# Criteria for non-compliance of MCS

- The use a thermo button could help control the wearing of MCS



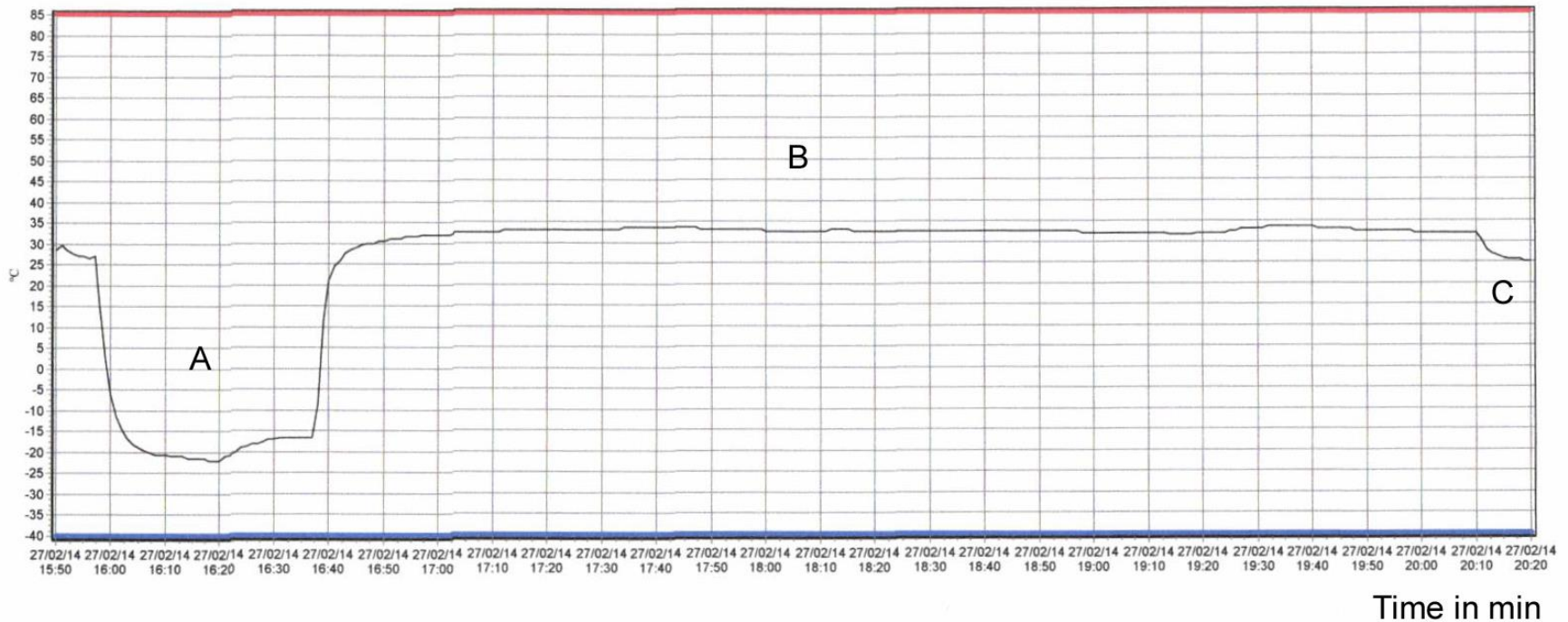
# Criteria for non-compliance of MCS

- **A spy that measures the skin temperature**
  - Programming over a month with a measurement every 21 min
  - Thermotrack is waterproof
  - Record of temperature
    - From  $-40^{\circ}\text{C}$  to  $80^{\circ}\text{C}$



# Criteria for non-compliance of MCS

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# Criteria for non-compliance of MCS

The Thermotrack can be putten into the setback  
of the stocking



# Criteria for non-compliance of MCS

- Proposal of a pilot study before a broad use of Thermotrack
  - Main objective
    - To study the reliability of Thermotrack for 6 days
  - Secondary objective
    - To compare the data declared by the healthy subjects (diary) to the data recorded by Thermotrack

# Criteria for non-compliance of MCS

- Proposal of a pilot study for a broad use of Thermotrack
  - Methodology
    - Non comparative study in 10 healthy subjects wearing MCS (18-21 mmHg) with Thermotrack for 6 days
    - With handwashes of MCS in warm water

# Criteria for non-compliance of MCS

- **Conclusions**
- **Causes for non-compliance of MCS are multiple**
  - Miscommunication between the patient and the prescriber and the pharmacist
  - Misuse of MCS
  - Application difficulties (age and weight)....



# Criteria for non-compliance of MCS

- Causes for non-compliance of MCS are multiple
  - Cosmetic reasons
  - Non efficiency
  - Side effects
  - Discomfort
  - High cost...
  - Nervous breakdown

# Criteria for non-compliance of MCS

- But if we don't know whether MCS is really worn by the patient .....
- All results on clinical efficiency of MCS are questionable !



# Criteria for non-compliance of MCS

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# Criteria for non-compliance of MCS

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