



PRESENTS

Sports Participation Carries High Arrhythmic Risk

in Patients with

Arrhythmogenic Right Ventricular Dysplasia (ARVD)

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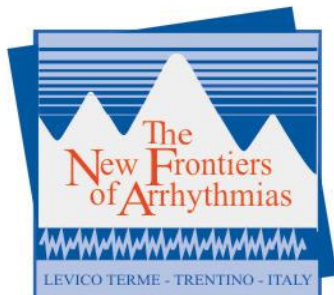
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Abstract Form • Presentation Outline • Presentation

Originally created by Dr. Budzikowski in Powerpoint, the following presentation was converted to pdf format to make it available to a greater audience of viewers.



NEW FRONTIERS OF SPORT ARRHYTHMOLOGY

LEVICO TERME, Trentino - Italy
September 21st - 23rd 2007



ABSTRACT FORM

Titolo
Title ⇒

SPORTS PARTICIPATION CARRIES HIGH ARRHYTHMIC RISK IN PATIENTS WITH
ARRHYTHMOGENIC RIGHT VENTRICULAR DYSPLASIA (ARVD).

Autori
Authors ⇒

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Wojciech Zareba, MD, PhD¹ NA Mark Estes III, MD², Hugh Calkins, MD³, Frank I
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Inizio
testo
Text ⇒

Prior reports in the literature have indicated that sports participation may have association with the onset of ARVD. In this study we sought association between sports participation and arrhythmic events in patients with ARVD. We analyzed 101 patients from the North American ARVD registry looking at prior arrhythmic events, arrhythmia inducibility during programmed electrical stimulation (PES), further arrhythmic events – judged by appropriate defibrillator therapy. The level of sports participation was stratified as competitive (COM), recreational (REC) and inactive (IN).

Patients who participated prior to diagnosis in complete or recreational activity had more arrhythmic events by the time of diagnosis (97 and 81% respectively) than those who were inactive (56% $p=0.001$). Competitive and recreational sports participation was also associated with a higher frequency of inducibility of ventricular arrhythmias during PES (64 and 25% competitive and recreational respectively vs inactive 13% $p<0.001$). Only COM had a higher cumulative frequency of further arrhythmic events (Fig 1). We conclude therefore that sports participation at any level in patients with ARVD is associated with higher arrhythmic burden.

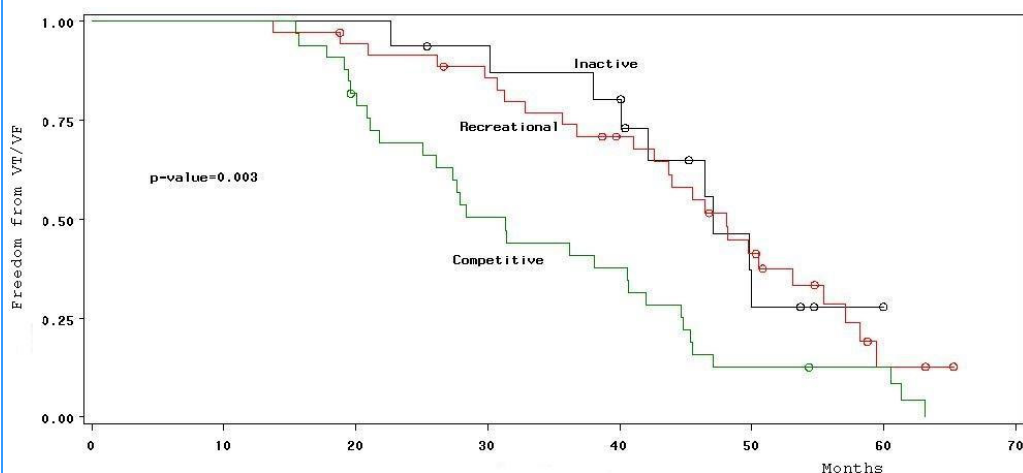
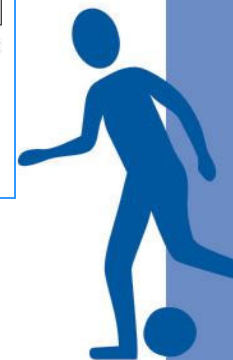


Fig 1.



1 *Sports Participation Carries High Arrhythmic Risk in Patients with Arrhythmogenic Right Ventricular Dysplasia (ARVD).*

Adam S. Budzikowski, M.D., Ph.D.

2 *Disclosures*

- o This work was supported by NIH Grant U01 HL65594
- o This work was done at the University of Rochester Medical Center.
- o My current affiliation is with SUNY Downstate Medical Center in Brooklyn, NY.

3 *Background*

- o Participation in sports and resulting arrhythmic event can be the first presentation of patients with ARVD
- o It has been postulated then that participation in sports activities may be associated with the onset of ARVD

4 *Etiology of SCD in athletes*

5 *Aim*

- o In this study we sought association between sports participation and arrhythmic events in patients with ARVD.

6 *Methods*

- o We analyzed 101 patients from the North American ARVD registry looking at:
 - o prior arrhythmic events,
 - o arrhythmia inducibility during programmed electrical stimulation (PES),
 - o further arrhythmic events – judged by appropriate defibrillator therapy.

7 *Methods*

- o The level of sports participation was stratified as:
 - o competitive (COM)
 - o recreational (REC) and
 - o inactive (IN)
- o This stratification was based on patients self description of activities.

8 *Methods*

- o Arrhythmic event was defined as:
 - o Spontaneous VT
 - o Spontaneous VF
 - o Aborted SCD
 - o Inducible VT
- o These were identified either from ambulatory monitoring, AED interrogation or ICD interrogation.

9 *Arrhythmic events at the time of diagnosis*

10 *VT inducibility*

11 *Further arrhythmic events following diagnosis*

12 *Conclusions*

- o It appears that sports participation carries significant arrhythmic burden early in the disease.
- o It is uncertain why sports participation is associated with higher chance of VT inducibility during PES.
- o Continuation of sports activity seems to present constant risk factor for future ventricular arrhythmias.

13 *Discussion*

14 *Sympathetic response to exercise*

*Sports Participation Carries High
Arrhythmic Risk in Patients with
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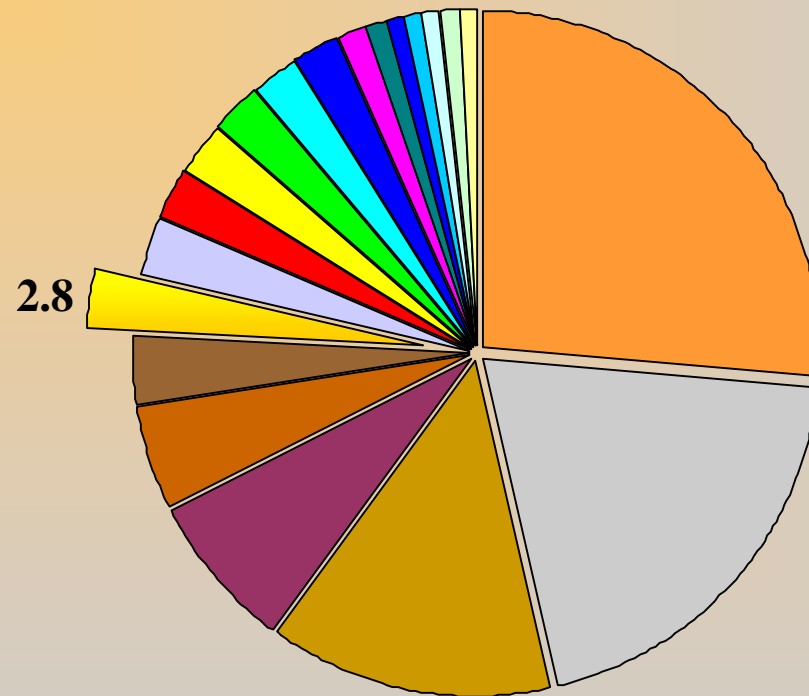
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Background

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Etiology of SCD in athletes



- | | | | |
|---------------|------------------|------------------|----------------------------|
| ■ HOCM | □ Comm Cor | ■ CA anom | ■ LVH |
| ■ Myocarditis | ■ Aortic rupture | ■ ARVD | □ CA bridging |
| ■ AS | ■ CAD | ■ Dilated CMP | ■ Myxomatous MV |
| ■ Asthma | ■ Heat Stroke | ■ Drug abuse | ■ Other CV causes |
| ■ Long QT | □ Sarcoid | □ Cardiac injury | ■ Ruptured cerebral artery |

Maron NEJM2003;349:1064-75

Aim

- In this study we sought association between sports participation and arrhythmic events in patients with ARVD.

Methods

- We analyzed 101 patients from the North American ARVD registry looking at:
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 - arrhythmia inducibility during programmed electrical stimulation (PES),
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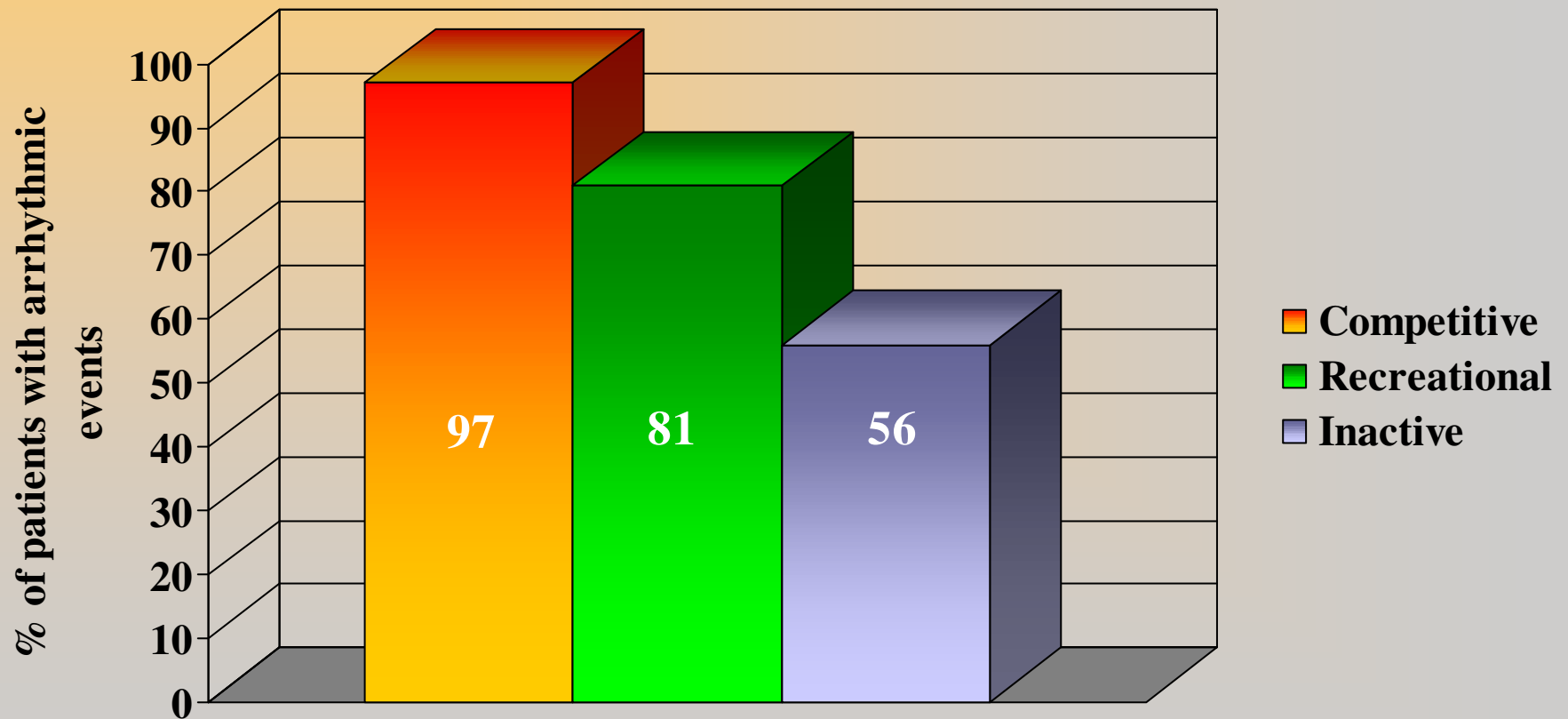
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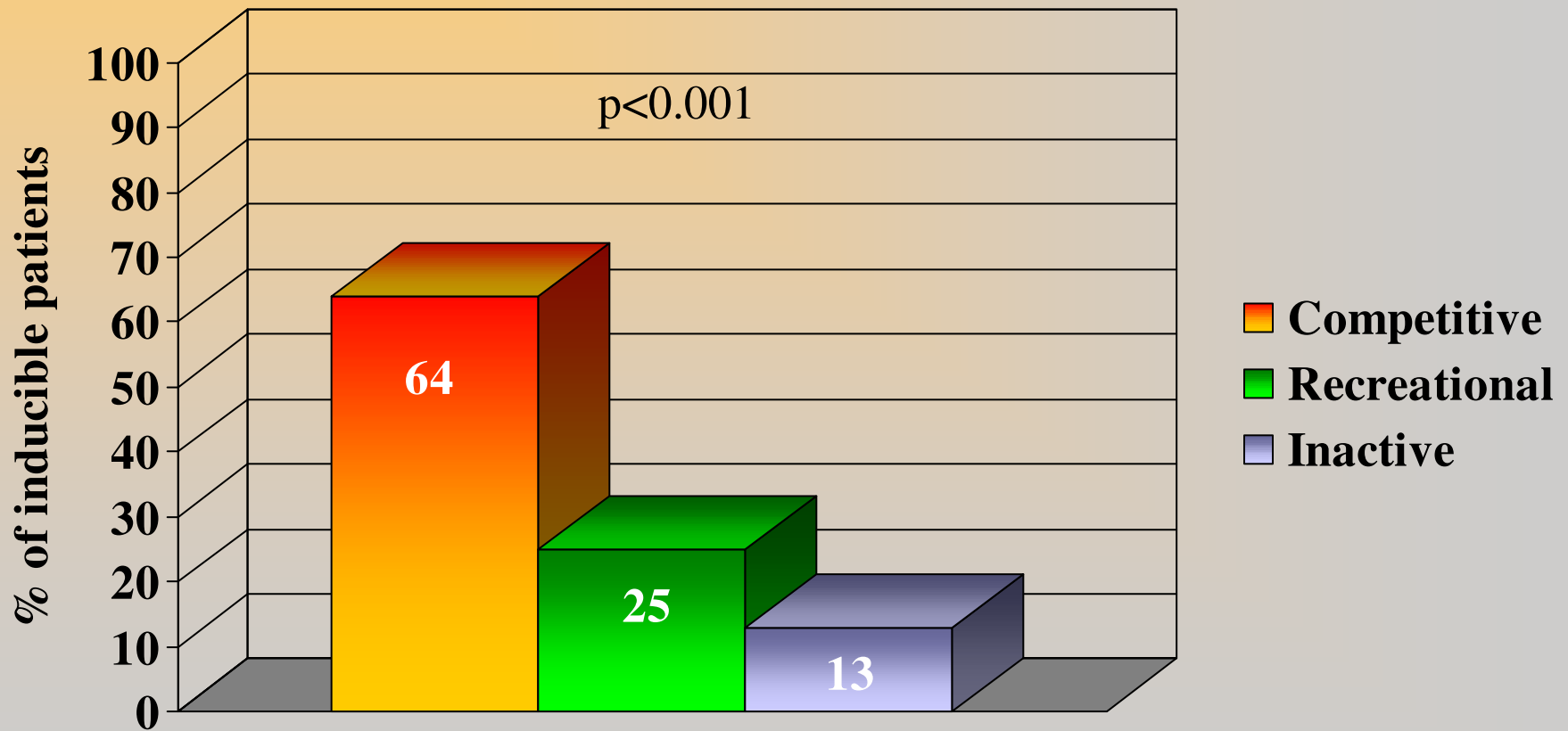
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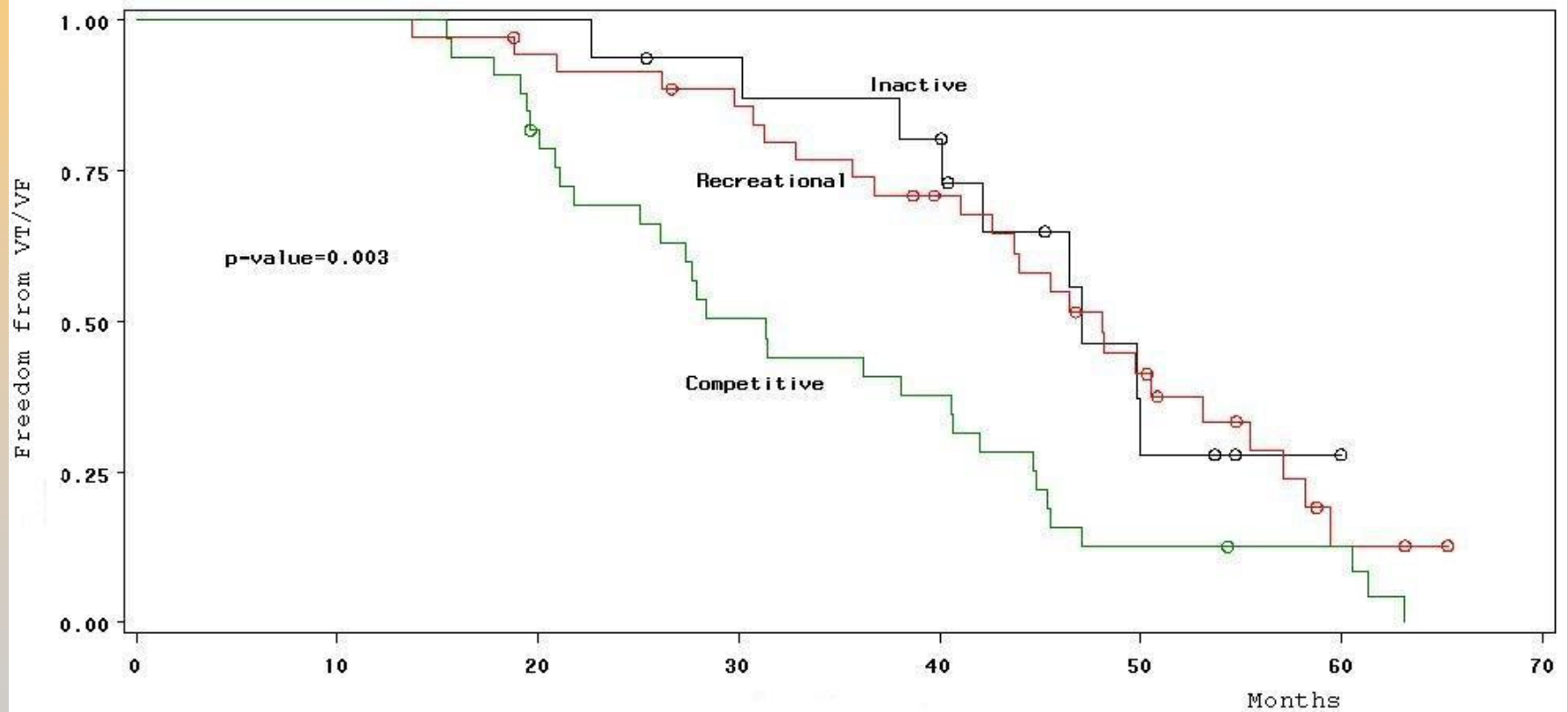
Arrhythmic events at the time of diagnosis



VT inducibility



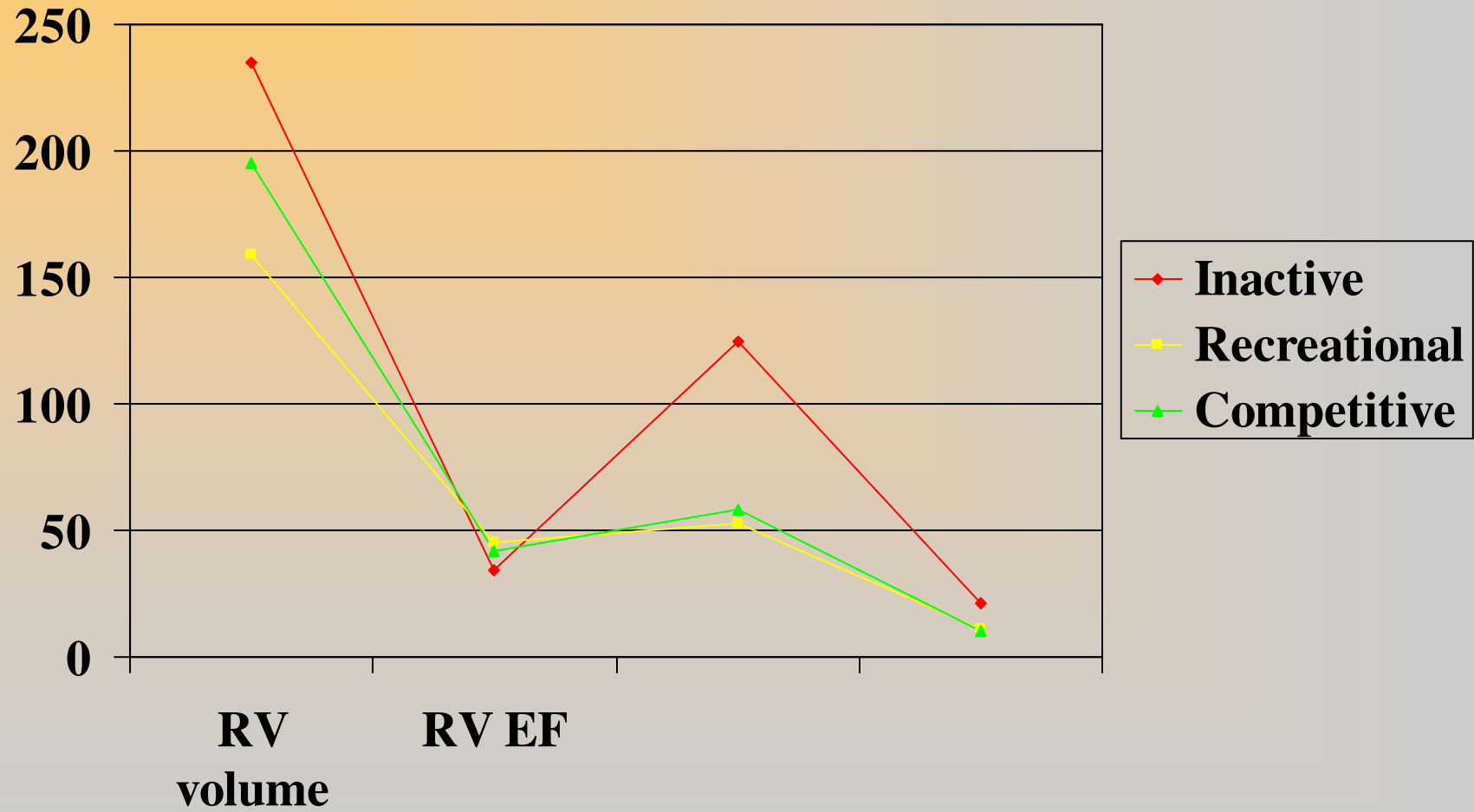
Further arrhythmic events following diagnosis



Conclusions

- It appears that sports participation carries significant arrhythmic burden early in the disease.
- It is uncertain why sports participation is associated with higher chance of VT inducibility during PES.
- Continuation of sports activity seems to present constant risk factor for future ventricular arrhythmias.

Discussion



Sympathetic response to exercise

