



World Congress of Cardiology 2008

Buenos Aires, Argentina



# Dance-Hall dancing in patients with cardiovascular disease: Experience of 2 years.

# Dance

(Dance for Cardiovascular Exercise)

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Y Prior; MA Viveros; I Montero; M Chen; A Halabe; A López; D Flores; L Loría.

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- **Cardiovascular diseases mayor cause of mortality.**
- **Effectiveness of exercise training in patients with CVD well established.**
- **Rius et. al, (DanCE study) evaluated the impact and security of the training program based on a Dance- Hall Dancing therapy, with some rhythm variations such as salsa, rock & roll, danzon and blues, for patients with cardiovascular disease.**





**Dance-Hall Dancing programmed routines demonstrated  
cardiovascular adaptation as in the conventional training  
(cycloergometers) in patients.**

**After a 4 week training, an improvement in the maximal exercise  
tolerance<sub>(1.7 METs)</sub> was observed in the stress test,**





**Since the follow-up had not been evaluated, a 2 year term measurement of cardiovascular impact and incidence of complications was decided.**





**Evaluate cardiovascular impact and incidence of complications in a 2 years dancing training program.**





- **560 patients with cardiovascular disease were included (ischaemic, valvular, chronic heart failure, congenital).**
- **Tutorial dance-hall dancing sessions, twice a week. (PhII, PhIII)**





## Dancing routine registration:

- ECG
- Borg (effort perception)
- Blood pressure

**Arrhythmias:** (FVE:7 or more ventricular premature beats per minute, ventricular trigeminy or bigeminy, ventricular couplets or triplets, ventricular tachycardia, ventricular fibrillation).



**Ischaemia:** measured up by: clinic (angina), changes in the ECG (plain T waves, T wave inverted or changes in the segment ST).

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Prior, Y; Viveros, MA; Montero, I; Chen, M; Halabe, A; López, A; Flores; Loría, L.





<b>Variable</b>	<b>Rest (mean±SD)</b>	<b>Maximal effort (mean±SD)</b>	<b>Recovery (mean±SD)</b>
<b>N<sub>sessions</sub></b>	<b>5883 (PhII: 4203, PhIII: 1680)</b>		
<b>N<sub>sessions per patient</sub></b>	<b>6 ± 4</b>		
<b>HR<sub>Ipm</sub></b>	<b>73 ± 14</b>	<b>87 ± 18*</b>	<b>74 ± 14</b>
<b>SBP<sub>mmHg</sub></b>	<b>108 ± 13.4</b>	<b>113.2 ± 12.2*</b>	<b>106.3 ± 12.94</b>
<b>DBP<sub>mmHg</sub></b>	<b>70 ± 9</b>	<b>70 ± 8.2</b>	<b>70 ± 9</b>
<b>DP<sub>Ipm*mmHg</sub></b>	<b>7680 ± 1711</b>	<b>9530 ± 2366*</b>	<b>7690 ± 2037</b>
<b>Borg<sub>6-20</sub></b>	<b>Not measured</b>	<b>11.2 ± 1*</b>	<b>Not measured</b>

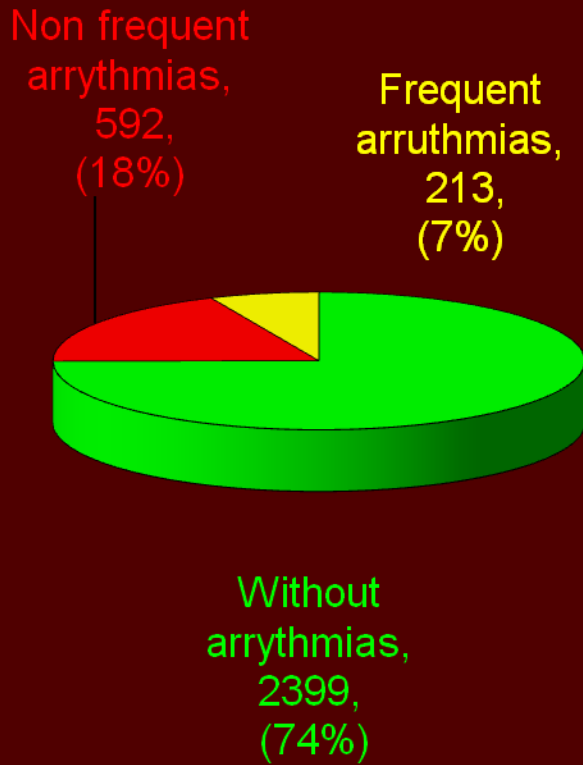
Heart Rate (HR). Systolic Blood Pressure (SBP). Diastolic Blood Pressure (DBP). Double product (DP).

\*T test (p <0.001) maximal effort vs I rest.

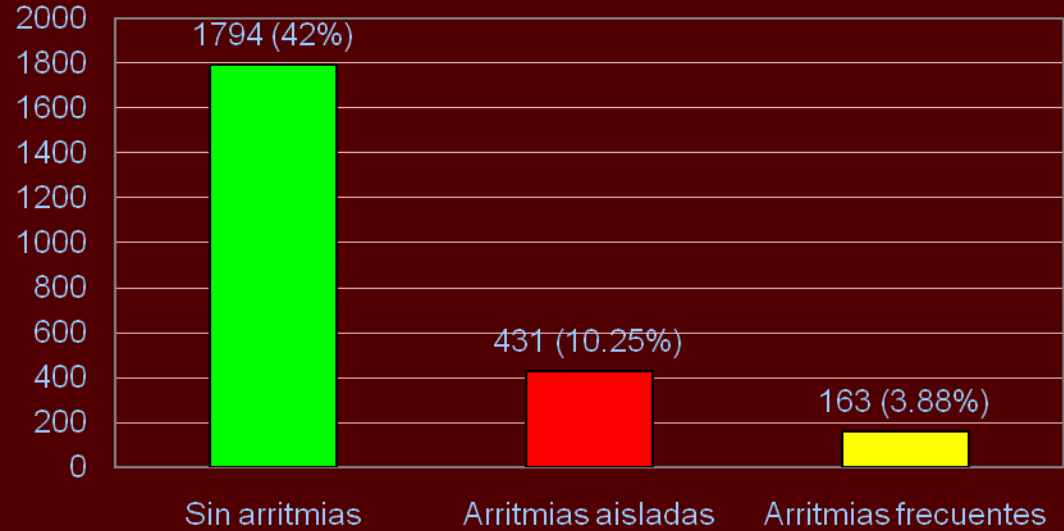




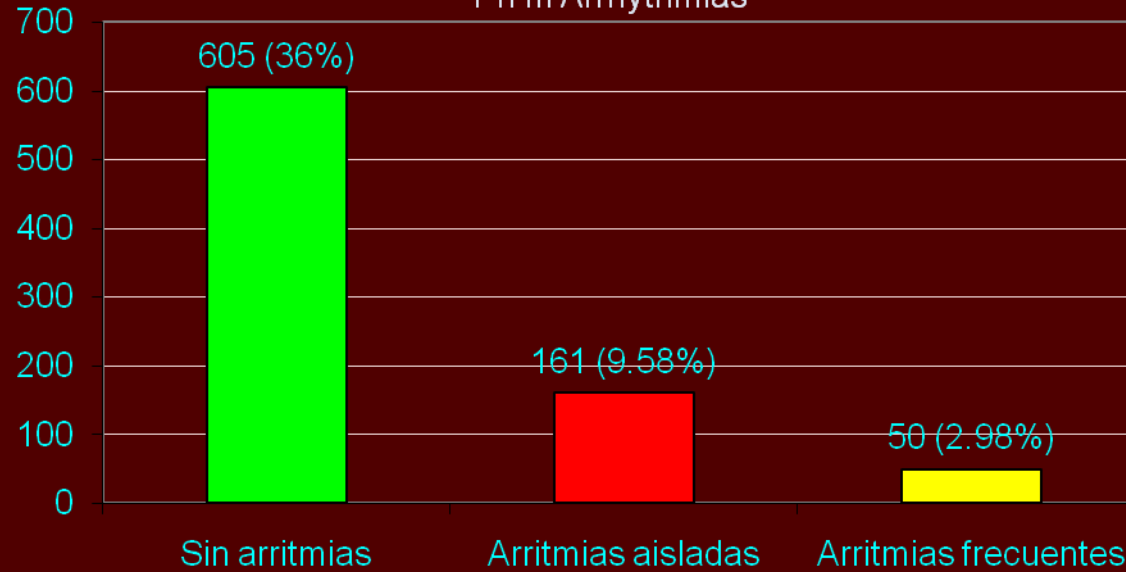
## Arrhythmias



### Ph II Arrhythmias



### Ph III Arrhythmias





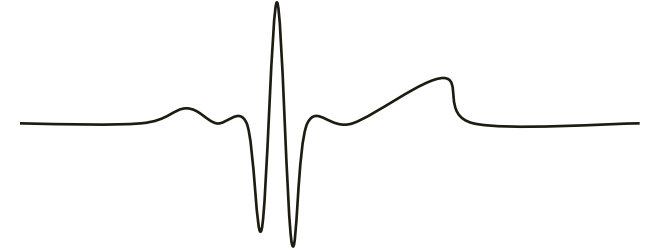
No patient developed:

- sustained ventricular tachycardia
- ventricular fibrillation
- sudden death.





Ischaemic incidence:



- 20 % in phase II
- 17% in phase III (changes in ST segment).

No patient presented angina nor acute coronary syndrome.





## Dance-Hall dancing provides:

- increase of the HR during training (17%  $p < 0.001$ ).
- sufficient cardiovascular stimulus for training adaptation.

Even a high percentage (70%) of patients were considered high risk,  
the incidence of adverse events was very low.





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