INFLUENCE OF BODY MASS INDEX IN THE QUALITY OF CARDIOPULMONARY RESUSCITATION

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Background: Studies have suggested that even health care providers do not perform effective Cardiopulmonary Resuscitation (CPR). There are several factors that can interfere in the quality of CPR.

Hypothesis: We hypothesized that those medical students with normal body mass index could perform better CPR maneuvers when compared with those with higher body mass index (BMI)

Methods: We trained 82 medical students from first year through the “Family and friends CPR anytime” course. Four weeks after the course, two minutes of chest compressions were performed to the Resusci Anne manikin with the PC skill reporting system. Initially all students had their weight and height measured hence the calculation of BMI was made. The quality of chest compressions was compared among students with normal BMI (Group A) and those overweight and obese (Group B).

Results: The distribution of students considering BMI was 65.9% with normal BMI (Group A) and 24.5% with overweight, 4.8% were graded as obese I and 4.8% graded as obese II (Group B). The mean age of group A was 20.2 ±2.7 years and of group B was 21.6 ±3.7 years. No significant differences between the sex of the two groups was observed (46.3% and 63%, p= 0.314 for male sex, respectively). The total number of compressions (189.9 vs. 188.1), the average of rate compressions per minute (93.8 vs. 92.6) and the right hands position (173.3 vs. 164.5) did not show significant differences (p=0.7569, p=0.6783, p=0.6145, respectively) despite the BMI. The average chest compressions with adequate depth during the two minutes were different between the two groups: 43.4 (22.5%) in Group A and 90.3 (47.9%) in Group B, p=0.0004.

Conclusion: The depth of chest compressions was higher in the overweight group, but not yet the ideal depth, while no differences was observed in rate of compressions per minute and hands position between the two groups. These findings reinforce the need for devices which measure the depth of chest compressions during CPR maneuvers.