INTRODUCTION

• Nine-tenths percent of patients seen in the emergency department (ED) after motor vehicle collision (MVC) are not admitted.1 Unfortunately, chronic post-MVC pain develops in 20-40% of these individuals.2
• Evidence from population-based and postoperative studies suggests that increased body mass index (BMI) increases risk of chronic pain development.
• However, results of previous studies have been mixed.3 To our knowledge, no studies have assessed the effect of BMI on chronic pain risk after exposure to traumatic/stressful events such as a MVC.
• In this study we evaluated the influence of BMI on moderate or severe axial pain (MSAP) and overall pain (MSOP) outcomes after MVC. We hypothesized that increased BMI would increase the risk of developing these pain outcomes.

METHODS

• European Americans were enrolled in ED post-MVC (Figure 1, Table 1). Height and weight data were collected and used to calculate BMI. Pain outcomes, assessed in the ED, 6 weeks, 6 months, and 12 months after MVC included an evaluation of overall pain (0-10 NRS) and axial pain (maximum pain experienced in the neck, right and left shoulders, and upper or lower back; 0-10 NRS). If pain was reported in a region, participants were asked if it was MVC-related. Only MVC-related pain was used in analyses. BMI was defined using standard categories.4
• Pain severity ≥4 was defined as moderate or severe.5
• The relative risk of each pain outcome according to BMI category was assessed using Proc GenMod (SAS 9.3) adjusting for age, sex, and study site.

RESULTS

• 840/948 (89%) of participants completed 6 month and 861/498 (93.7%) completed 1 year follow-up.
• Due to small sample size, overweight and obese individuals were excluded. BMI category distribution of participants are shown in Figure 2.
• In crude analyses BMI did not influence acute pain outcomes but predicted pain severity and number of body regions with moderate or severe pain at 6 months and 1 year (Figures 3 and 4).
• Adjusted relative risks for adverse pain outcomes by BMI category are shown in Tables 2 and 3. Obese and morbidly obese individuals were at increased risk of persistent pain at 6 months and/or 1 year.
• Risk appeared to increase in stepwise fashion with increasing BMI category.

CONCLUSIONS

• Increasing BMI increases the risk of persistent moderate or severe axial pain and overall pain. The strength of this association is modest for overweight or obese BMI categories, and moderate to strong for the morbidly obese BMI category.

REFERENCES


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