

Ambu® Perfit ACE™ Sizing Study

A Comparative Study of Two Cervical Immobilization Collars

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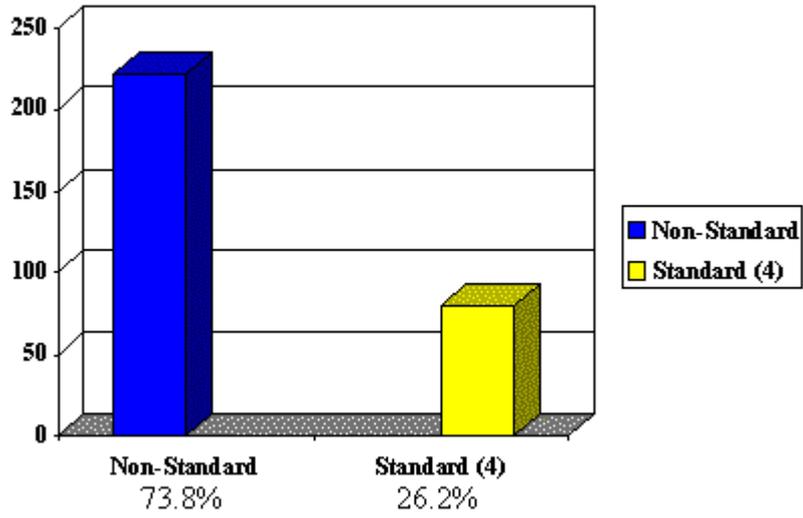
Study Objective: Cervical immobilization is one of the hallmark procedures of out of hospital emergency care. There are almost 10,000 cases of new spinal cord injury, in the United States, each year. Causes include motor vehicle crashes, acts of violence, falls, and sports injuries. Cervical immobilization in those patients is directed at preventing increased cervical damage from stable or unstable cervical spine injuries. To facilitate this task numerous cervical immobilization collars have been devised. Each claiming certain qualities over the others. Recently we evaluated two of these collars. Each has some degree of "sizing" that allows one collar to potentially fit numerous patients. One collar uses four potential size differences, the other sixteen. The purpose of the study was to determine how many patients fell outside of the sizing range of the four size collar, but was within the range of the sixteen size collar.

Methods: Three hundred and one randomly chosen subjects were placed in two different cervical collars. One was a Laerdal® Stiffneck® Select™ the other an Ambu® Perfit ACE™ Sizing was accomplished according to the manufacturers standards. This was accomplished by three, well trained, paramedics of Whatcom Medic One. These individuals had a minimum of 10 years of field experience and were EMS educators. Each patient served as their own control. The patients demographics were recorded to include age, sex, weight, and height. Sizes were correlated to the four positions of the Laerdal® collar. Number of notches off from the 4 standard sizes of the Laerdal® collar, as well as the actual number, for the Perfit ACE™ was noted. In some patients their comfort comparison between collars was also noted. This, however, had not been one of the primary study objectives.

Results: Of the 301 subjects 193 (64%) were male and 108 (36%) female. Their average age was 38.5 years with an average height of 5'9" and weight of 174.8 Lbs. Only 26.2% (79 patients) were "standard" size. While 73.8% (222 patients) were non standard. Of these "non standard" size patients 40% (89 patients) were more than one size off of "standard" on the Perfit ACE™ Collar. Approximately 100 patients provided spontaneous comments suggesting that the Perfit ACE™ Collar seemed more comfortable. However, no formal evaluation of this item was performed so the data is potentially spurious. While it is clear that most patients did not fall on a "standard" size no conclusions could be made about efficacy of cervical immobilization.

Conclusion: From this group of 301 randomly selected individuals it appears that the Ambu® Perfit ACE™ Cervical immobilization collar affords more opportunities for "correct fit" in patients with potential cervical spine injury. However, the implications of the large (73.8%) group of patients that did not fit a "standard" size Laerdal® Stiffneck® Select™ awaits further imaging studies. Further, the implications for greater comfort, noted by study subjects, also awaits a more detailed evaluation to determine the importance of this factor.

Subjects "In-Between" the 4 Standard Positions



Subjects "In-Between" Sizes

4 Standard Sizes/Position Collar

