

A prospective randomized comparison of **loop recorders** versus Holter monitors in patients with syncope or presyncope☆

Soori Sivakumaran, MD^a, Andrew D Krahn, MD^a  , George J Klein, MD^a, Jane Finana, Raymond Yee, MD^a, Suzanne Renner, MD^a, Allan C Skanes, MD^a

Abstract

Background

The initial management of syncope or presyncope typically involves short-term cardiac monitoring using a Holter monitor. A **loop** recorder is used to extend the period of monitoring to increase the probability of obtaining a symptom-rhythm correlation. **Loop recorders** and Holter monitors are both used commonly, but their utility has not been compared prospectively.

Methods

Patients with syncope or presyncope referred for a Holter monitor or a **loop** recorder were assigned randomly to receive either a 48-hour Holter monitor or a **loop** recorder for 1 month as an initial diagnostic strategy. If the initial strategy was unsuccessful, patients were offered crossover to the alternate strategy.

Results

One hundred patients (mean [± SD] age, 56 ± 20 years; 44 women) with syncope (n = 21), presyncope (n = 29), or both (n = 50) were enrolled. Of the 49 patients assigned randomly to an external **loop** recorder first, 31 (63%) had an arrhythmia identified or excluded, versus 12 (24%) of 51 patients assigned to a Holter monitor initially ($P < 0.0001$). Arrhythmia was identified as a cause of syncope in 1 patient with a **loop** recorder, compared with no patients with a Holter monitor ($P = 0.31$). Of the 29 patients with negative results with Holter monitoring who went on to receive a **loop** recorder, 13 (45%) had arrhythmia excluded, compared with none of the 4 patients who crossed over to receive a Holter monitor. The overall probability of obtaining a symptom-rhythm correlation was 56% (44/78) for **loop recorders** versus 22% (12/55) for Holter monitors ($P < 0.0001$). Despite patient education and test transmissions, 13 (23%) of 57 patients who had recurrence of their symptoms failed to activate their **loop** recorder properly.

Conclusion

Loop recorders have a much higher diagnostic yield for patients with syncope or presyncope as compared with Holter monitors. The utility of **loop recorders** is limited by some patients' inability to operate them correctly.

^a Division of Cardiology, University of Western Ontario, London, Ontario, Canada

 Requests for reprints should be addressed to Andrew D. Krahn, MD, London Health Sciences Center, University Campus, 339 Windermere Road, London, Ontario N6A 5A5, Canada

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