

Case Study 5

Kaplan Meier Analyses

Case Presentation:

At your weekly clinic meeting, the Advance Practice Nurse presents a plan to initiate a new policy whereby the nurses working in a cardiology clinic would drive a protocol-based care delivery model for patients with atrial fibrillation. The APN cites a recent publication by Hendriks et al. (2012). One of the cardiologists at the meeting states “Not all patients with a-fib are the same... you can’t protocolize everything... this won’t work.” The decision is made that every committee member should read the Hendriks paper and be prepared to discuss this topic next week. As you skim through the paper, you come across information in the Statistical Analysis section (bottom of page 2693), that informs you that the authors calculated Kaplan–Meier estimates and their 95% CI.

Discussion 1a:

What does the symbol 95%CI represent?

Answer:

Discussion 1b:

What is the definition of a confidence interval?

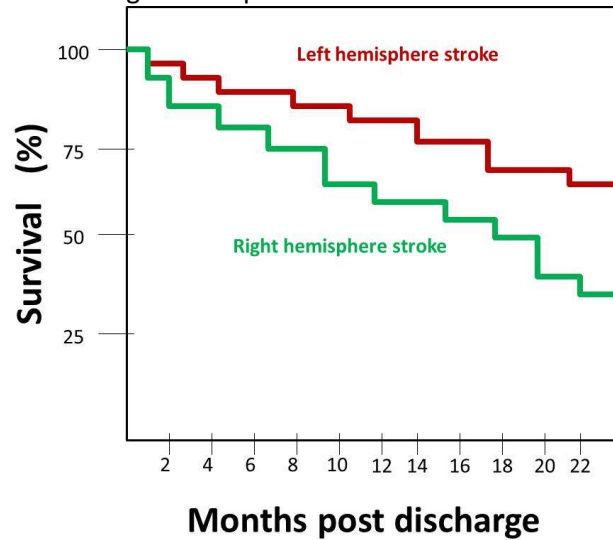
Answer:

Digging deeper:

The Kaplan-Meier estimate is most commonly used to inform the reader about survival. You should expect to find a graph with two lines that start at the same point along a Y-axis (vertical axis) and continue across a horizontal plane. The units of measure for the x-axis (horizontal axis) should be increments of time (e.g., days, months, years).

The graph below (fictional data) is an example of a typical Kaplan-Meier estimate. That describes 2-year outcomes for stroke patients discharged from your hospital.

Figure A. Post-discharge survival for left vs. right hemisphere stroke



Discussion 2a:

What information does the graph above describe?

Answer:

Discussion 2a:

Does this graph provide an n for stroke patients?

Answer:

Digging deeper:

Table 1 (page 2695) is titled “Characteristics of the patients according to treatment group.” A portion of this table is pasted below.

Characteristic	Nurse-led care (n = 356)	Usual care (n = 356)
Age, year	66 ± 13	67 ± 12
Male sex, n (%)	197 (55.3)	221 (62.1)
Type of AF, n (%)		
Paroxysmal	190 (53.4)	203 (57.0)
Persistent	68 (19.1)	44 (12.4)
Permanent	75 (21.1)	84 (23.6)
Symptomatic	294 (82.6)	296 (83.1)

Discussion 3a:

There are several times where the symbol ‘n’ is used in this table.
What does the symbol ‘n’ represent?

Answer:

Discussion 3b:

The third row in the table provides information about persistent as a type of AF.
What does 68 (19.1) represent?

Answer:

Discussion 3c:

Which of the following three statements is correct:

- A. 19.1 % of patients with persistent AF were in the Nurse-led care group.
- B. 19.1 % of patients in the Nurse-led care group had persistent AF.
- C. Persistent AF accounts for 19.1% of the 68 patients in the Nurse-led care group.

Answer:

Discussion 3.d:

How many women were assigned to receive “Nurse-Led Care”?

Answer:

Coming to consensus

The Kaplan-Meier estimates from page 2697 of the Hendriks (2012) article are displayed below.

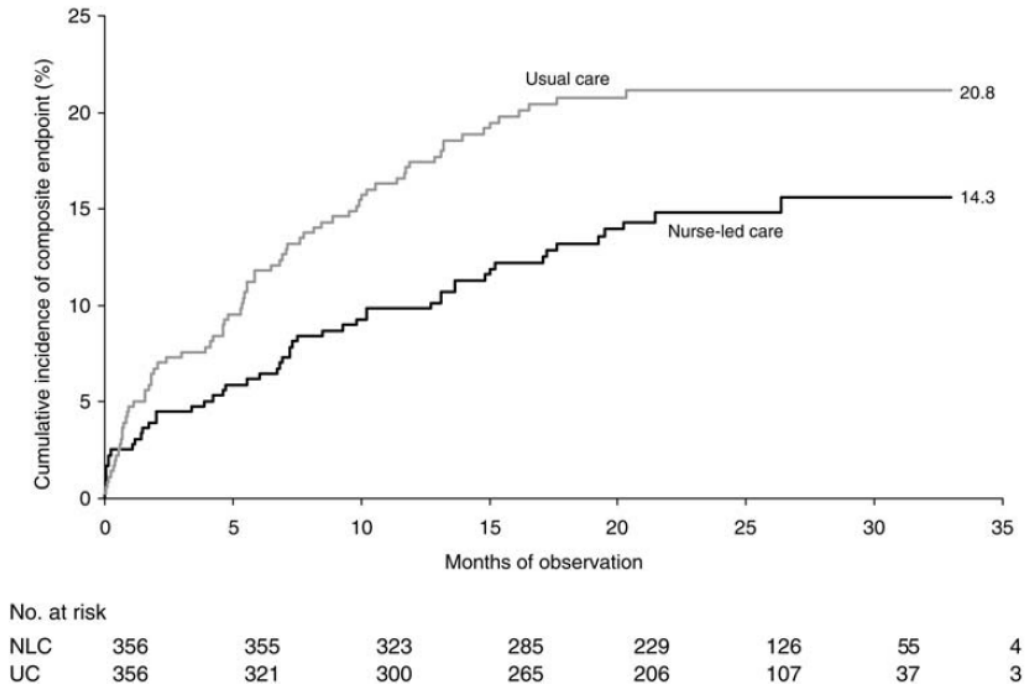


Figure 3 Kaplan-Meier estimates of the cumulative incidence of the primary outcome in both groups. The primary outcome is a composite of the first occurrence of cardiovascular hospitalization or cardiovascular death. NLC, nurse-led care; UC, usual care.

Discussion 4.a:

The bottom right hand corner has two abbreviations "NLC" and "UC"
What, if any, statistical concept is represented by these abbreviations?

Answer:

Discussion 4.b.

Between 25 and 26 months, how many patients were at risk in the Nurse-Led Care Group

Answer:

You have now completed Phase IV.