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Interpretation of survival curves

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Survival curves illustrate prognosis. The percentage of patients reaching an endpoint (eg, death, recurrence of disease, or cure) is plotted on the y (vertical) axis against time on the x (horizontal) axis.
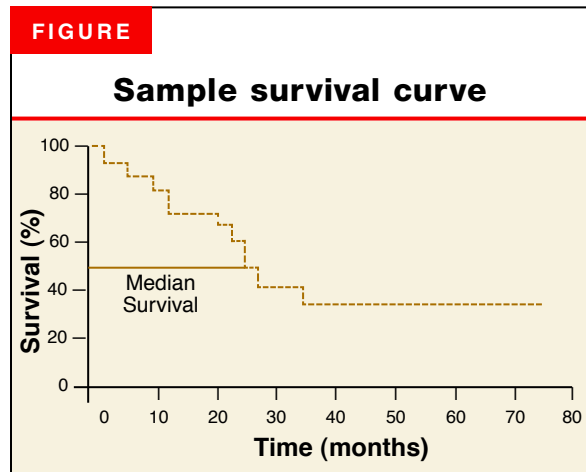
■ PLOTTING A SURVIVAL CURVE

Two common plotting methods are used. With the actuarial method, the x axis is divided into regular intervals (eg, by month) and percent survival is calculated for each interval. With the Kaplan-Meier method, percent survival is recalculated each time a patient dies (or reaches a different endpoint). Consider the example here (**Figure**).[1]

Time zero is when each patient entered the trial. *Survival* is the percentage of patients still alive thereafter. *Median survival* is found by extending a horizontal line from the 50% survival point until it intersects the curve (24 months in this case).

■ LIMITATIONS

Survival curves have limitations. Consider a study that enrolls patients between 1996 and 2002 and ends in 2005. All that is known about a patient

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FIGURE

Sample survival curve

enrolled in 2002 who survived until 2005 is that he or she survived 3 years. Some patients also drop out of the study early or are lost to follow-up. Some patients die from causes other than the one under study.

Censoring is the process of excluding data from survival curves when information about survival is unknown. For a patient who drops out early, for example, only data obtained when the patient was followed would be included. The result is a more accurate picture of survival for the patients under study.

REFERENCE
1. Skordilis P, Mouzas IA, Dimoulios PD, Alexandrakis G, Moschandrea J, Kouroumalis E. Is endosonography an effective method for detection and local staging of the ampullary carcinoma? A prospective study. *BMC Surg* 2002; 2(1):1.