

LECTURE WEEK 4 Supplement  
Spring 2005  
February 1 and 4

## TMA4275 LIFETIME ANALYSIS

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1

### Leukemia Data

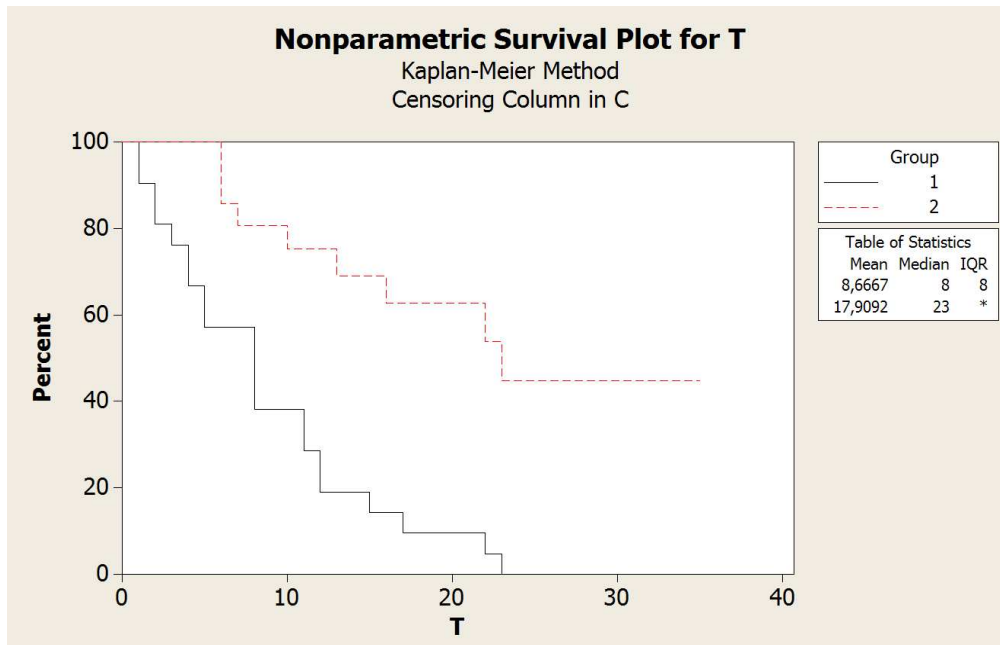
Remission times for 42 children with acute leukemia (free of symptoms).

PL=Placebo, MP=6MP treatment, Y=time, C=censoring  
(0 means censored)

Row	YPL	CPL	YMP	CMP
1	1	1	6	1
2	1	1	6	1
3	2	1	6	1
4	2	1	6	0
5	3	1	7	1
6	4	1	9	0
7	4	1	10	1
8	5	1	10	0
9	5	1	11	0
10	8	1	13	1
11	8	1	16	1
12	8	1	17	0
13	8	1	19	0
14	11	1	20	0
15	11	1	22	1
16	12	1	23	1
17	12	1	25	0
18	15	1	32	0
19	17	1	32	0
20	22	1	34	0
21	23	1	35	0

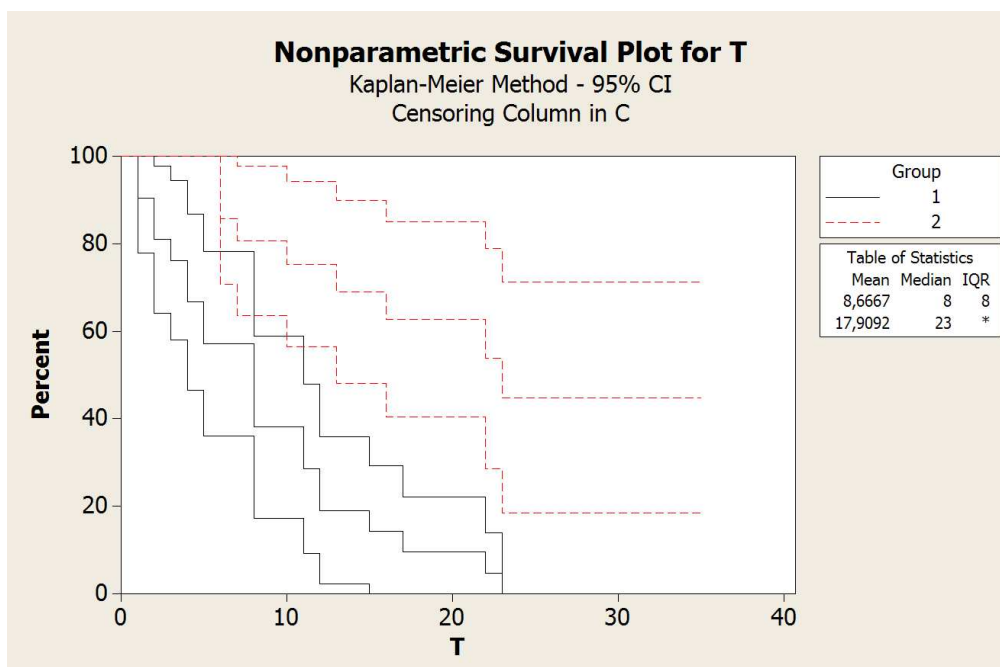
2

**Example: Leukemia data (1=Placebo, 2=6MP)**



3

**Example: Leukemia data (1=Placebo, 2=6MP, with confidence limits)**



4

## Logrank Test for Leukemia Data

**C = Control group (Placebo)**

**B = Treatment group (6MP)**

Time	RiskC	RiskB	Risk	FailC	FailB	Fail	EC	EB
1	21	21	42	2	0	2	$(2/42) * 21 = 1$	$(2/42) * 21 = 1$
2	19	21	40	2	0	2	$(2/40) * 19 = 0.95$	$(2/40) * 21 = 1.05$
3	17	21	38	1	0	1	$(1/38) * 17 = 0.447$	$(1/38) * 21 = 0.553$
4	16	21	37	2	0	2	$(2/37) * 16 = 0.865$	$(2/37) * 21 = 1.135$
13	4	12	16	0	1	1	$(1/16) * 4 = 0.25$	$(1/16) * 12 = 0.75$
23	1	6	7	1	1	2	$(2/7) * 1 = 0.286$	$(2/7) * 6 = 1.714$
Total				21	9		10.749	19.251

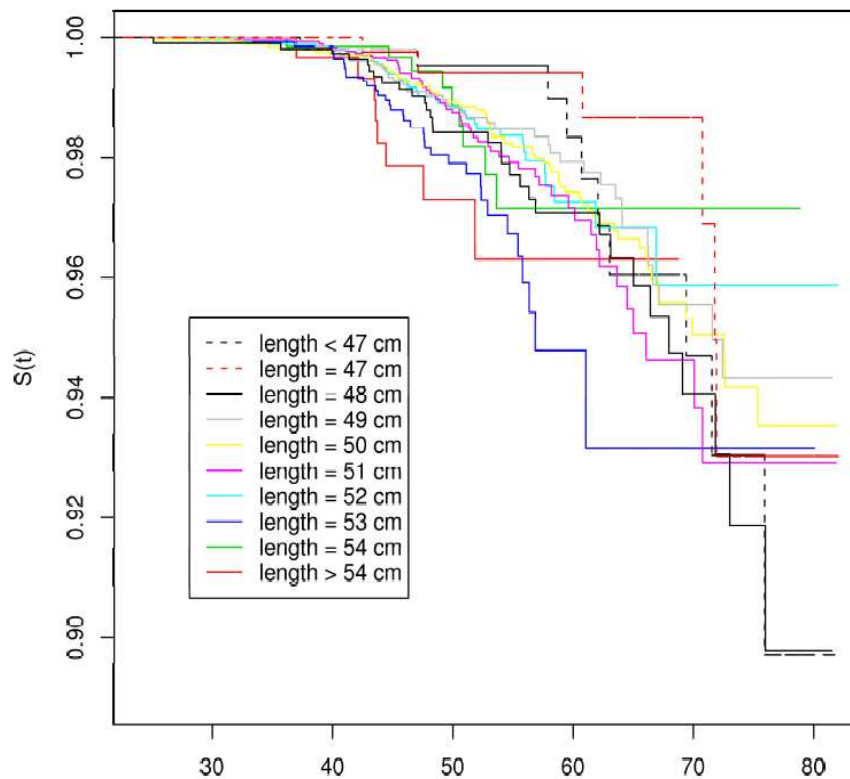
**Test statistic:**

$$\frac{(O_C - E_C)^2}{E_C} + \frac{(O_B - E_B)^2}{E_B}$$

$$= \frac{(21 - 10.749)^2}{10.749} + \frac{(9 - 19.251)^2}{19.251} = 5.46 + 9.77 = 15.33$$

5

## Breast cancer vs birth length



6