Observations 12 to 20 of the bladder cancer dataset

Obs	id	Tumour Recurrence	Time Interval	Start (Day)	Stop (Day)	Treatment	Tumour Number	Tumour Size
12	10	1	1	0	12	0	1	1
13	10	1	2	12	16	0	1	1
14	10	0	3	16	18	0	1	1
15	11	0	1	0	23	0	3	3
16	12	1	1	0	10	0	1	3
17	12	1	2	10	15	0	1	3
18	12	0	3	15	23	0	1	3
19	13	1	1	0	3	0	1	1
20	13	1	2	3	16	0	1	1

Cox PH model using data in counting process format

The PHREG Procedure

Model Information	
Data Set	SURV_ANA.BLADDER2
Dependent Variable	start
Dependent Variable	stop
Censoring Variable	Recurrence
Censoring Value(s)	0
Ties Handling	BRESLOW

Number of Observations Read	191
Number of Observations Used	190

Summary of the Number of Event and Censored Values			
Total	Event	Censored	Percent Censored
190	112	78	41.05

Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics		
Criterion	Without Covariates	With Covariates
-2 LOG L	934.210	920.159
AIC	934.210	926.159
SBC	934.210	934.315

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	14.0509	3	0.0028
Score (Model-Based)	15.4173	3	0.0015
Score (Sandwich)	10.9852	3	0.0118
Wald (Model-Based)	15.1736	3	0.0017
Wald (Sandwich)	11.3807	3	0.0098

Analysis of Maximum Likelihood Estimates							
Parameter	DF	Parameter Estimate	Standard Error	StdErr Ratio	Chi-Square	Pr > ChiSq	Hazard Ratio
Treatment	1	-0.40710	0.24183	1.209	2.8338	0.0923	0.666
Tumour_number	1	0.16065	0.05689	1.185	7.9735	0.0047	1.174
Tumour_size	1	-0.04009	0.07222	1.028	0.3081	0.5788	0.961

Cox PH model using data in counting process format

The PHREG Procedure

Model Information	
Data Set	SURV_ANA.BLADDER2
Dependent Variable	start
Dependent Variable	stop
Censoring Variable	Recurrence
Censoring Value(s)	0
Ties Handling	BRESLOW

Number of Observations Read	191
Number of Observations Used	190

Summary of the Number of Event and Censored Values					
Stratum	Time_interval	Total	Event	Censored	Percent Censored
1	1	85	47	38	44.71
2	2	46	29	17	36.96
3	3	27	22	5	18.52
4	4	20	14	6	30.00
5	5	12	0	12	100.00
Total		190	112	78	41.05

Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics		
Criterion	Without Covariates	With Covariates
-2 LOG L	645.831	639.718
AIC	645.831	645.718
SBC	645.831	653.874

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	6.1130	3	0.1062
Score (Model-Based)	6.4533	3	0.0915
Score (Sandwich)	8.7634	3	0.0326
Wald (Model-Based)	6.4070	3	0.0934
Wald (Sandwich)	7.1925	3	0.0660

Cox PH model using data in counting process format

The PHREG Procedure

Analysis of Maximum Likelihood Estimates							
Parameter	DF	Parameter Estimate	Standard Error	StdErr Ratio	Chi-Square	Pr > ChiSq	Hazard Ratio
Treatment	1	-0.33430	0.19706	0.912	2.8777	0.0898	0.716
Tumour_number	1	0.11565	0.04991	0.930	5.3690	0.0205	1.123
Tumour_size	1	-0.00805	0.06012	0.827	0.0179	0.8935	0.992

Cox PH model using data in counting process format and testing for interation between time interval and treatment

The PHREG Procedure

Model Information	
Data Set	SURV_ANA.BLADDER3
Dependent Variable	start
Dependent Variable	stop
Censoring Variable	Recurrence
Censoring Value(s)	0
Ties Handling	BRESLOW

Number of Observations Read	191
Number of Observations Used	190

Summary of the Number of Event and Censored Values					
Stratum	Time_interval	Total	Event	Censored	Percent Censored
1	1	85	47	38	44.71
2	2	46	29	17	36.96
3	3	27	22	5	18.52
4	4	20	14	6	30.00
5	5	12	0	12	100.00
Total		190	112	78	41.05

Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics		
Criterion	Without Covariates	With Covariates
-2 LOG L	645.831	637.471
AIC	645.831	649.471
SBC	645.831	665.782

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	8.3599	6	0.2129
Score (Model-Based)	8.7841	6	0.1861
Score (Sandwich)	12.4285	6	0.0531
Wald (Model-Based)	8.5821	6	0.1985
Wald (Sandwich)	14.8154	6	0.0217

Cox PH model using data in counting process format and testing for interation between time interval and treatment

The PHREG Procedure

Analysis of Maximum Likelihood Estimates							
Parameter	DF	Parameter Estimate	Standard Error	StdErr Ratio	Chi-Square	Pr > ChiSq	Hazard Ratio
Treatment	1	-0.74437	0.42687	0.911	3.0407	0.0812	0.475
Tumour_number	1	0.26101	0.09253	0.742	7.9570	0.0048	1.298
Tumour_size	1	0.08960	0.14393	0.868	0.3875	0.5336	1.094
Time_Tr	1	0.23176	0.20825	0.898	1.2385	0.2658	1.261
Time_Tum_Num	1	-0.08363	0.05285	0.833	2.5036	0.1136	0.920
Time_Tum_Size	1	-0.05879	0.07901	0.884	0.5537	0.4568	0.943

Contrast Test Results			
Contrast	DF	Wald Chi-Square	Pr > ChiSq
TEST INTERACTION	3	3.3102	0.3462

The Likelihood Ratio Test (LRT) for three product terms in the model

Obs	reduced	full	diff	df	P_value
1	-639.718	-637.471	2.247	3	0.52275

Cox PH model using data in counting process format

The PHREG Procedure

Model Information	
Data Set	SURV_ANA.BLADDER4
Dependent Variable	start2
Dependent Variable	stop2
Censoring Variable	Recurrence
Censoring Value(s)	0
Ties Handling	BRESLOW

Number of Observations Read	191
Number of Observations Used	190

Summary of the Number of Event and Censored Values

Stratum	Time_interval	Total	Event	Censored	Percent Censored
1	1	85	47	38	44.71
2	2	46	29	17	36.96
3	3	27	22	5	18.52
4	4	20	14	6	30.00
5	5	12	0	12	100.00
Total		190	112	78	41.05

Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Without Covariates	With Covariates
-2 LOG L	735.076	726.320
AIC	735.076	732.320
SBC	735.076	740.476

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	8.7559	3	0.0327
Score (Model-Based)	9.5977	3	0.0223
Score (Sandwich)	10.2065	3	0.0169
Wald (Model-Based)	9.4570	3	0.0238
Wald (Sandwich)	12.1363	3	0.0069

Cox PH model using data in counting process format

The PHREG Procedure

Analysis of Maximum Likelihood Estimates							
Parameter	DF	Parameter Estimate	Standard Error	StdErr Ratio	Chi-Square	Pr > ChiSq	Hazard Ratio
Treatment	1	-0.26952	0.20808	1.002	1.6778	0.1952	0.764
Tumour_number	1	0.15353	0.04889	0.938	9.8620	0.0017	1.166
Tumour_size	1	0.00684	0.06222	0.889	0.0121	0.9125	1.007