Two Way Analysis of Variance   Thursday, May 25, 2017, 11:58:45

Data source: sirius red in Notebook

General Linear Model

Dependent Variable: % stained area

Normality Test: Passed   (P > 0.200)

Equal Variance Test: Failed   (P = 0.003)

Source of Variation	DF	SS	MS	F	P
time	3	3896.757	1298.919	28.686	<0.001
diet	1	2351.785	2351.785	51.938	<0.001
time x diet	3	2573.671	857.890	18.946	<0.001
Residual	149	6746.856	45.281		
Total	156	17200.886	110.262		

The difference in the mean values among the different levels of time is greater than would be expected by chance after allowing for effects of differences in diet. There is a statistically significant difference (P = <0.001). To isolate which group(s) differ from the others use a multiple comparison procedure.

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The effect of different levels of time depends on what level of diet is present. There is a statistically significant interaction between time and diet. (P = <0.001)

Power of performed test with alpha = 0.0500: for time : 1.000
Power of performed test with alpha = 0.0500: for diet : 1.000
Power of performed test with alpha = 0.0500: for time x diet : 1.000

Least square means for time :
Group	Mean	SEM
3M	13.228	1.117
6M	23.389	0.966
9M	23.489	1.069
12M	27.609	1.241

Least square means for diet :
Group	Mean	SEM
CD	17.956	0.810
HF	25.902	0.748

Least square means for time x diet :
Group	Mean	SEM
3M x CD	8.637	1.468
3M x HF	17.820	1.682
6M x CD	13.445	1.435
6M x HF	33.332	1.295
9M x CD	20.750	1.586

9M x HF   26.228   1.435   12M x CD   28.990   1.943
12M x HF   26.228   1.544

All Pairwise Multiple Comparison Procedures (Tukey Test):

Comparisons for factor: **time**

Comparison	Diff of Means	p	q	P	P<0.050
12M vs. 3M	14.380	4	12.185	<0.001	Yes
12M vs. 6M	4.220	4	3.795	0.037	Yes
12M vs. 9M	4.120	4	3.557	0.058	No
9M vs. 3M	10.260	4	9.386	<0.001	Yes
9M vs. 6M	0.100	4	0.0984	1.000	No
6M vs. 3M	10.160	4	9.731	<0.001	Yes

Comparisons for factor: **diet**

Comparison	Diff of Means	p	q	P	P<0.050
HF vs. CD	7.946	2	10.192	<0.001	Yes

Comparisons for factor: **diet within 3M**

Comparison	Diff of Means	p	q	P	P<0.05
HF vs. CD	9.182	2	5.815	<0.001	Yes

Comparisons for factor: **diet within 6M**

Comparison	Diff of Means	p	q	P	P<0.05
HF vs. CD	19.887	2	14.552	<0.001	Yes

Comparisons for factor: **diet within 9M**

Comparison	Diff of Means	p	q	P	P<0.05
HF vs. CD	5.478	2	3.622	0.010	Yes

Comparisons for factor: **diet within 12M**

Comparison	Diff of Means	p	q	P	P<0.05
CD vs. HF	2.762	2	1.574	0.266	No

Comparisons for factor: **time within CD**

Comparison	Diff of Means	p	q	P	P<0.05
12M vs. 3M	20.353	4	11.820	<0.001	Yes
12M vs. 6M	15.545	4	9.104	<0.001	Yes
12M vs. 9M	8.240	4	4.647	0.006	Yes
9M vs. 3M	12.113	4	7.925	<0.001	Yes
9M vs. 6M	7.305	4	4.831	0.004	Yes
6M vs. 3M	4.808	4	3.312	0.089	No

Comparisons for factor: **time within HF**

Comparison	Diff of Means	p	q	P	P<0.05
6M vs. 3M	15.513	4	10.334	<0.001	Yes

6M vs. 9M	7.105	4	5.199	0.001	Yes	6M vs. 12M	7.105	4	4.986
0.002	Yes								
12M vs. 3M	8.408	4	5.208	0.001	Yes				
12M vs. 9M	0.00000957	4	0.00000642	1.000	No				
9M vs. 3M	8.408	4	5.378	<0.001	Yes				