STATISTIC ANALYSIS
Identifiers: NCT03636386
Protocol ID: 60312069
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Brief Title: Percutaneous Microelectrolysis on Myofascial Trigger Points Pain. (MEP)
Official Title: Effectiveness of Percutaneous Microelectrolysis in the Decrease of Pain in Myofascial Trigger Points: Evaluation Through Algometry and Visual Analog Scale. Randomized Controlled Trial.

Statistical analysis

The data collected from the participants were tabulated in a Microsoft Excel® program table, and subsequently a mother base table was made with the data obtained after the intervention. The STATA® v.13 program was used for statistical analysis, where the proposed variables were analyzed; Painful pressure threshold (UPD) and pain intensity (ID) as primary variables, and sex, body mass index, shortened trapezius laterality, spiny-acromion process distance as secondary variables.

Statistical analysis began by comparing both study groups (microelectrolysis, n = 30 and control, n = 24). The Shapiro-Wilk test was applied to determine the use of parametric or non-parametric tests. The analysis of the pain pressure threshold (UPD) and pain intensity (ID) variables before intervention and the secondary variables sex, body mass index (BMI) and laterality (shortened trapezoid), spiny process-acromion distance (cm) being obtained a normal distribution behavior except for the spiny process-acromion process variable (p value

<0.05). The variables UPD (Kg / cm^2), Intensity (millimeters) and BMI (Kg / m2) were analyzed with the T-Student test (T-Test) showing that there are no statistically significant

differences between the microelectrolysis (MEP) and control group (p value> 0.05). On the other hand, for the analysis of the sex variable, the chi-square test (x2) was used, showing no differences between the study groups (p value> 0.05). For the laterality variable (presence of trigger point on the right and left side), Fisher's statistical test (F-Fisher) was used, not showing significant differences between the groups (p value> 0.05). For the spiny process-acromion process variable, given the result of the S-Wilk test, the U-Mann Whitney test was used, neither showing a difference between the groups (p value> 0.05). This analysis allowed to determine the homogeneity of both groups to enhance the interventions, MEP and conventional ultrasound for the experimental group, and only ultrasound for the control group (Table 1. Characterization of study groups).

Results

Sample was categorized in relation age, sex, BMI, SUTL, PPT and PI preintervention (PPTpre and PIpre). S-Wilk test was applied to analyze normal distribution and then compare homogeneity between groups (Table 1. Characterization of study groups). Statistical analysis performed in relation primary and second variables not shown statistically differences, so groups are comparable at beginning of study.

Variable	**MEP (n = 24)**	**Control (n = 24)**	**p-value**	**Sample distribution**
sex (%) **men** **women**	 11 (22,9%) 13 (27,1%)	 12 (25,0%) 12 (25,0%)	*p = 0,7730**	*Normal**
Age *(mean,+/-DS)*	22,5+/-1,9	22,0+/-1,6	*p = 0,2993***	*Normal***

BMI (Kg/m2) ***(mean +/-DS)***	24,5 +/- 3,4	22,9+/-2,3	*p =0,0616***	*Normal***
Short trapezius muscle laterality (%) ***right*** ***left***	17 (70,8%) 7 (29,2%)	20 (83,3%) 4 (16,7%)	*p = 0,2470****	*Normal****
SP-AC distance (cm) ***(mean+/-DS)***	9,2+/-1,8	8,4+/-1,7	*p = 0,1241***	*Normal***
PPTpre 1 (Kg/cm2) ***(mean +/-DS)***	1,4+/-0,2	1,4+/-0,2	*p = 0,5734***	*Normal***
PIpre1 (mm) ***(mean +/- DS)***	32,1+/-13,6	31.4 +/- 15.1	*p = 0,8729***	*Normal***

Table 1. Characterization of study groups. Variable sex and short trapezius muscle laterality is represented in frequencies (%). Values for continuous variables are in means with their corresponding standard deviation (DS). Variable sex was analyzed using xi2 test*. For the analysis of continuous variables, the T-Student test was used**. Variable short trapezius laterality was analyzed with the F-Fisher test***.

BMI: body mass index, SUTL: short upper trapezius muscle laterality, SP-AC distance: distance spinous process from C7 to acromion, PPTpre: pain pressure threshold pre intervention at day one, PIpre: pain intensity pre intervention at day one. $p > 0.05$****

Table 2 shows evaluation results obtained for PPTpre, PPTpost, PPT2, PPT3, PPTdiff1-1, PPTdiff2-1, PPTdiff3-1, PIpre, PIpost, PI2, PI3, PIdiff1-1, PIdiff2-1 and PIdiff3-1 represented for each group. Averages with respective standard deviations (SD) were determined for all variables. S-Wilk showed a normal distribution, so T-Student test was used. PPTdiff1-1 for MEP group was 0,2+/-0,2 and control 0,2+/-0,2 without statistical difference between groups (p=0,0520). Means for PPTdiff2-1 for MEP group was 0,4+/-2 and control 0,2+/-0,2 showing statistically significant differences in favor of the experimental group (p=0,0032*). Means for PPTdiff3-1 for MEP group was 0,5+/-0,4 and control 0,3+/-0,3 without difference between groups (p=0,0548). PIdiff1-1 for MEP group was -7,5+/-8,4 and control -6,6+/-8,6 without statistical difference between groups (p=0,3557). Means for PIdiff2-1 for MEP group was -10,5+/-11,9 and control -7,6+/-12,1 without statistically differences (p=0,2055). Means for PPTdiff3-1 for MEP group was -14+/-12,3 and control -11,5+/-13,1 without difference between groups (p=0,2457).

Variable	Experimental (n = 24)	Control (n = 24)	p-value	Variable	Experimental (n = 24)	Control (n = 24)	p-value
PPTpre (Kg/cm^2) *(mean +/-DS)*	**1,4+/-0,2**	**1,4+/-0,2**	***p = 0,6299***	**PIpre (mm) *(mean +/-DS)***	**32,1+/-13,6**	**31.4 +/-15.1**	***p = 0,8729***
PPTpost (Kg/cm^2) *(mean +/-DS)*	**1,6+/-0,2**	**1,6+/-0,2**	***p = 0,4008***	**PIpost (mm) *(mean +/-DS)***	**24,6+/-12,7**	**24,8+/-15,1**	***p = 0,9508***
PPT2 (Kg/cm^2) *(mean +/-DS)*	**1,7 +/-0,1**	**1,6+/-0,2**	***p = 0,0062****	**PI2 (mm) *(mean +/-DS)***	**21,6+/-11,0**	**23,8+/-14,0**	***p = 0,5461***
PPT3 (Kg/cm^2) *(mean +/-DS)*	**1,9 +/-0,3**	**1,7+/-0,2**	***p = 0,0805***	**PI3 (mm) *(mean +/-DS)***	**18,1+/-9,9**	**20,0+/-13,2**	***p = 0,5815***
PPTdiff1-1 (Kg/cm^2) *(mean +/-DS)*	**0,2+/-0,2**	**0,2+/-0,1**	***p = 0,0520***	**PIdiff1-1 (mm) *(mean +/-DS)***	**-7,5+/-8,4**	**-6,6+/-8,6**	***p = 0,3557***
PPTdiff2-1 (Kg/cm^2) *(mean +/-DS)*	**0,4+/-0,2**	**0,2+/-0,2**	***p = 0,0032****	**PIdiff2-1 (mm) *(mean +/-DS)***	**-10,5+/-11,9**	**-7,6+/-12,1**	***p = 0,2055***
PPTdiff3-1 (Kg/cm^2) *(mean +/-DS)*	**0,5+/-0,4**	**0,3+/-0,3**	***p = 0,0548***	***PIdiff3-1 (mm) (mean +/-DS)***	**-14,0+/-12,3**	**-11,5+/-13,1**	***p = 0,2457***

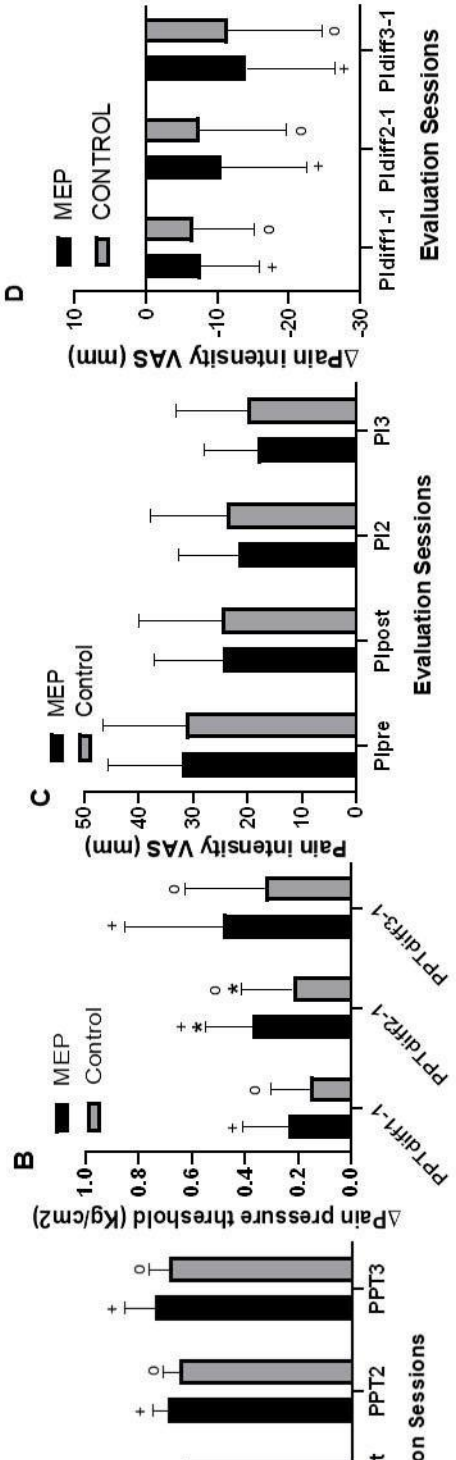
Table 1. PPT, PI, PPTdiff and PIdiff variables measured by groups after baseline ultrasound treatment and MEP intervention for all evaluation sessions. Values are means with their corresponding standard deviation (SD). Data analyzed using parametric T-Student test to compare intergroup differences for variables. PPT1-1: pain pressure threshold difference pre and postintervention at day one, PPT2-1: pain pressure threshold difference preintervention at day one and second evaluation at day tree, PPT3-1: pain pressure threshold difference pre intervention at day one and third evaluation at day seven. PIdiff1-1: pain intensity pre and post intervention at day one, PI2-1: pain intensity preintervention at day one and second evaluation at day tree, PI3-1: pain intensity difference preintervention at day one and third evaluation at day seven. *p < 0.05.

Table 3 shows the PPTdiff and PIdiff between days one, three and seven obtained for MEP group. S-Wilk showed a normal distribution, so T-Student test was used. Significant differences are observed in MEP group for PPTdiff1-1 (p=0,0000), PPTdiff2-1 (p=0,0000), PPTdiff3-1 (p=0,0000), PIdiff1-1 (p=0,0001), PIdiff2-1 (p=0,0001) and PIdiff3-1 (p=0,0008**).** There are also statistically significant differences for control group in the variables PPTdiff1-1 (p=0.0001), PPTdiff2-1 (p=0.0001), PPTdiff3-1 (p=0,0002), PIdiff1-1 (p= 0,0022), PIdiff2-1 (p=0,0008) and PIdiff3-1 (p=0.0001).

Variable	Experimental (n = 24)	p-value	Control (n = 30)	p-value
PPTdiff1-1 (Kg/cm^2) ***(mean +/-DS)***	**0,2+/-0,2**	***p = 0,0000****	**0,2+/-0,1**	***p = 0,0001****
PPTdiff2-1 (Kg/cm^2) ***(mean +/-DS)***	**0,4+/-0,2**	***p = 0,0000****	**0,2+/-0,2**	***p = 0,0000****
PPTdiff3-1 (Kg/cm^2) ***(mean +/-DS)***	**0,5+/-0,4**	***p = 0,0000****	**0,3+/-0,3**	***p = 0,0002****
PIdiff1-1 (mm) ***(mean +/-DS)***	**-8,0+/-8,6**	***p = 0,0001****	**-6,6+/-8,6**	***p = 0,0022****
PIdiff2-1 (mm) ***(mean +/-DS)***	**-10,8+/-12,2**	***p = 0,0001****	**-7,6+/-12,1**	***p = 0,0008****
PIdiff3-1 (mm) ***(mean +/-DS)***	**-14,3+/-14,5**	***p = 0,0008****	**-11,5+/-13,1**	***p = 0,0001****

Table 3. Description of PPT, PI, PPTdiff and PIdiff variables measured by groups after baseline ultrasound treatment and MEP intervention for all evaluation sessions. Values are means with their corresponding standard deviation (SD). Data analyzed using parametric T-Student test to compare intragroup differences for PPT and PI differences. Statistically significant difference for each variable was shown when groups were analyzed individually. *$p < 0.05$.

Figure 1 represents PPT, PPTdiff, PI and PIdiff for sessions one, three and seven for groups. Statistically significant differences are seen in the second evaluation session between MEP and control group. In both groups are significant differences for PPTdiff and PIdiff when they are analyzed independently, visualizing an improvement pressure tolerance and decrease in pain intensity between evaluation sessions.



d US therapy improved PPT (A,B) and PI (C,D) in both groups. (B) Statistically significant difference (*p < 0,05) for PPTdiff2-1 was
n groups at second evaluation. **(A, B)** Intragroup analysis for MEP (+) and Control (o) show significant improvements after
ervention for PPTdiff1-1, PPTdiff2-1 and PPTdiff3-1. **(C,D)** Intragroup analysis for MEP (+) and Control (o) show significant
er application of intervention for PIdiff1-1, PIdiff2-1 and PIdiff3-1. Values are means ± SD. Control: n=24; MEP: n=24

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Notes:
      1.  (-set maxvar-) 5000 maximum variables

. use
"/Users/jaimeopazoc/Documents/UNAB/BASES/DLB2018/DIC2018/121218.dta"

. sum edadaos

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     edadaos |        54    22.12963    1.770261         19         28

. swilk edadaos

                  Shapiro-Wilk W test for normal data

    Variable |    Obs       W           V         z       Prob>z
-------------+-------------------------------------------------
     edadaos |     54    0.95679      2.159     1.649    0.04955
```

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. bysort grupo:swilk edadaos

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-------------------------------------------------------------
-> grupo = MEP

                    Shapiro-Wilk W test for normal data

    Variable |    Obs       W           V         z       Prob>z
   -------------+--------------------------------------------------
     edadaos |     30    0.91504      2.700     2.054    0.01999

-------------------------------------------------------------------------------
-------------------------------------------------------------
-> grupo = CONTROL

                    Shapiro-Wilk W test for normal data

    Variable |    Obs       W           V         z       Prob>z
   -------------+--------------------------------------------------
     edadaos |     24    0.97683      0.625    -0.959    0.83111

. (la edad no se distribuye normal en el grupo MEP)
unrecognized command:  ( invalid command name
r(199);

. h tabstat

. bysort grupo:tabstat edadaos, s(med iqr)

-------------------------------------------------------------------------------
-------------------------------------------------------------
-> grupo = MEP

    variable |       p50       iqr
  -------------+--------------------
     edadaos |        22         2
  ----------------------------------

-------------------------------------------------------------------------------
-------------------------------------------------------------
-> grupo = CONTROL
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```
    variable |       p50       iqr
  -----------+--------------------
     edadaos |        22       2.5
  ----------------------------------

. bysort grupo:sum edadaos,detail

------------------------------------------------------------------------------
-------------------------------------------------------------
-> grupo = MEP

                          Edad (años)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           19             19
 5%           20             20
10%           21             21       Obs                  30
25%           21             21       Sum of Wgt.          30

50%           22                      Mean           22.26667
                        Largest       Std. Dev.      1.892514
75%           23             24
90%         24.5             25       Variance       3.581609
95%           27             27       Skewness       1.316004
99%           28             28       Kurtosis       5.056147

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-------------------------------------------------------------
-> grupo = CONTROL

                          Edad (años)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           19             19
 5%           19             19
10%           20             20       Obs                  24
25%           21             20       Sum of Wgt.          24

50%           22                      Mean           21.95833
                        Largest       Std. Dev.      1.627993
75%         23.5             24
90%           24             24       Variance       2.650362
```

```
95%           24              24        Skewness       -.1788824
99%           24              24        Kurtosis         1.92126


. ranksum edadaos, by( grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
-------------+---------------------------------
         MEP |       30         835         825
     CONTROL |       24         650         660
-------------+---------------------------------
    combined |       54        1485        1485

unadjusted variance      3300.00
adjustment for ties      -176.48
                     ----------
adjusted variance        3123.52

Ho: edadaos(grupo==MEP) = edadaos(grupo==CONTROL)
             z =   0.179
    Prob > |z| =   0.8580

. bysort grupo:swilk updpre1kgcm2 updpost1kgcm2 upd2kgcm2 updda3kgcm2
DELTAUPDPREPOST DELTAUPDDOSPRE DELTAUPDTRESPRE

-------------------------------------------------------------------------------
-------------------------------------------
-> grupo = MEP

                  Shapiro-Wilk W test for normal data

    Variable |    Obs       W           V         z       Prob>z
-------------+-------------------------------------------------
 updpre1kgcm2 |     30    0.93435       2.087     1.521     0.06414
 updpost1kg~2 |     30    0.97931       0.658    -0.867     0.80690
   upd2kgcm2 |     30    0.95820       1.329     0.588     0.27842
  updda3kgcm2 |     30    0.79882       6.394     3.836     0.00006
 DELTAUPDPR~T |     30    0.98513       0.473    -1.549     0.93931
 DELTAUPDDO~E |     30    0.96048       1.256     0.472     0.31863
 DELTAUPDTR~E |     30    0.81101       6.007     3.707     0.00010
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-------------------------------------------------------------------------------
-------------------------------------------
-> grupo = CONTROL

                    Shapiro-Wilk W test for normal data

    Variable |     Obs       W           V         z       Prob>z
   ------------+-----------------------------------------------------
 updpre1kgcm2 |      24    0.95997       1.080     0.157     0.43781
 updpost1kg~2 |      24    0.95040       1.338     0.594     0.27640
    upd2kgcm2 |      24    0.95013       1.345     0.604     0.27278
  updda3kgcm2 |      24    0.83305       4.503     3.068     0.00108
 DELTAUPDPR~T |      24    0.98149       0.499    -1.416     0.92169
 DELTAUPDDO~E |      24    0.96511       0.941    -0.124     0.54934
 DELTAUPDTR~E |      24    0.95140       1.311     0.552     0.29044

. bysort grupo:sum updpre1kgcm2 updpost1kgcm2 upd2kgcm2 updda3kgcm2
DELTAUPDPREPOST DELTAUPDDOSPRE DELTAUPDTRESPRE, d
> etail

-------------------------------------------------------------------------------
-------------------------------------------
-> grupo = MEP

                      UPD PRE 1 (Kg/cm2)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           1.1            1.1
 5%          1.15           1.15
10%           1.2            1.2       Obs                  30
25%          1.25            1.2       Sum of Wgt.          30

50%           1.4                      Mean           1.419333
                        Largest       Std. Dev.       .200309
75%          1.61           1.72
90%         1.725           1.73       Variance       .0401237
95%          1.75           1.75       Skewness       .3370372
99%          1.77           1.77       Kurtosis       1.843133

                      UPD POST 1 (Kg/cm2)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           1.2            1.2
```

5%	1.21	1.21		
10%	1.35	1.3	Obs	30
25%	1.5	1.4	Sum of Wgt.	30
50%	1.61		Mean	1.6
		Largest	Std. Dev.	.1863811
75%	1.73	1.8		
90%	1.81	1.82	Variance	.0347379
95%	1.92	1.92	Skewness	-.3238814
99%	1.95	1.95	Kurtosis	2.769574

UPD 2 (Kg/cm2)

Percentiles		Smallest		
1%	1.45	1.45		
5%	1.49	1.49		
10%	1.51	1.5	Obs	30
25%	1.63	1.52	Sum of Wgt.	30
50%	1.705		Mean	1.713
		Largest	Std. Dev.	.1366382
75%	1.82	1.9		
90%	1.9	1.9	Variance	.01867
95%	1.9	1.9	Skewness	-.1850884
99%	1.93	1.93	Kurtosis	2.131007

UPD día 3 (Kg/cm2)

Percentiles		Smallest		
1%	1.35	1.35		
5%	1.52	1.52		
10%	1.605	1.6	Obs	30
25%	1.65	1.61	Sum of Wgt.	30
50%	1.78		Mean	1.822
		Largest	Std. Dev.	.2699221
75%	1.85	2		
90%	2.075	2.15	Variance	.0728579
95%	2.6	2.6	Skewness	1.807479
99%	2.7	2.7	Kurtosis	6.988866

DELTAUPDPREPOST

	Percentiles	Smallest		
1%	-.1999999	-.1999999		
5%	-.1800001	-.1800001		
10%	-.095	-.12	Obs	30
25%	.0500001	-.0699999	Sum of Wgt.	30
50%	.17		Mean	.1806667
		Largest	Std. Dev.	.208044
75%	.34	.4299999		
90%	.46	.49	Variance	.0432823
95%	.55	.55	Skewness	.1213796
99%	.5999999	.5999999	Kurtosis	2.355019

DELTAUPDDOSPRE

	Percentiles	Smallest		
1%	-.09	-.09		
5%	-.0400001	-.0400001		
10%	-.03	-.03	Obs	30
25%	.1	-.03	Sum of Wgt.	30
50%	.3		Mean	.2936667
		Largest	Std. Dev.	.2249978
75%	.4899999	.5500001		
90%	.575	.5999999	Variance	.050624
95%	.64	.64	Skewness	-.0390176
99%	.6999999	.6999999	Kurtosis	1.852427

DELTAUPDTRESPRE

	Percentiles	Smallest		
1%	.02	.02		
5%	.03	.03		
10%	.045	.03	Obs	30
25%	.13	.0600001	Sum of Wgt.	30
50%	.335		Mean	.4026667
		Largest	Std. Dev.	.3711764
75%	.52	.65		
90%	.8	.95	Variance	.1377719
95%	1.4	1.4	Skewness	1.752146
99%	1.6	1.6	Kurtosis	6.121863

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-------------------------------------------
-> grupo = CONTROL

                    UPD PRE 1 (Kg/cm2)
-------------------------------------------------------------
      Percentiles      Smallest
 1%             1             1
 5%           1.1           1.1
10%          1.15          1.15       Obs                  24
25%          1.26           1.2       Sum of Wgt.          24

50%         1.335                     Mean                 1.4
                        Largest       Std. Dev.       .2151036
75%          1.59          1.69
90%           1.7           1.7       Variance        .0462696
95%          1.71          1.71       Skewness        .2114386
99%           1.8           1.8       Kurtosis        2.093726

                    UPD POST 1 (Kg/cm2)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           1.1           1.1
 5%          1.21          1.21
10%          1.32          1.32       Obs                  24
25%         1.425          1.35       Sum of Wgt.          24

50%           1.6                     Mean                1.56
                        Largest       Std. Dev.       .1901029
75%          1.71          1.73
90%           1.8           1.8       Variance        .0361391
95%          1.81          1.81       Skewness       -.6924839
99%          1.83          1.83       Kurtosis        2.854815

                     UPD 2 (Kg/cm2)
-------------------------------------------------------------
      Percentiles      Smallest
 1%          1.31          1.31
 5%          1.35          1.35
10%          1.35          1.35       Obs                  24
25%         1.535          1.38       Sum of Wgt.          24

50%         1.605                     Mean               1.615
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		Largest	Std. Dev.	.1578111
75%	1.74	1.77		
90%	1.8	1.8	Variance	.0249043
95%	1.8	1.8	Skewness	-.423535
99%	1.88	1.88	Kurtosis	2.272104

UPD día 3 (Kg/cm2)

	Percentiles	Smallest		
1%	1.42	1.42		
5%	1.43	1.43		
10%	1.55	1.55	Obs	24
25%	1.645	1.6	Sum of Wgt.	24
50%	1.7		Mean	1.72375
		Largest	Std. Dev.	.1880752
75%	1.805	1.85		
90%	1.85	1.85	Variance	.0353723
95%	1.92	1.92	Skewness	1.734271
99%	2.4	2.4	Kurtosis	8.292314

DELTAUPDPREPOST

	Percentiles	Smallest		
1%	-.14	-.14		
5%	-.01	-.01		
10%	0	0	Obs	24
25%	.045	0	Sum of Wgt.	24
50%	.135		Mean	.16
		Largest	Std. Dev.	.1498405
75%	.265	.3200001		
90%	.34	.34	Variance	.0224522
95%	.4	.4	Skewness	.3053529
99%	.5	.5	Kurtosis	2.734097

DELTAUPDDOSPRE

	Percentiles	Smallest		
1%	-.2199999	-.2199999		
5%	-.08	-.08		
10%	.02	.02	Obs	24
25%	.105	.09	Sum of Wgt.	24

```
50%           .19                      Mean                .215
                        Largest       Std. Dev.       .1936604
75%           .29        .4000001
90%           .48             .48      Variance       .0375043
95%           .54             .54      Skewness       .3329579
99%      .6999999        .6999999      Kurtosis       3.825891

                       DELTAUPDTRESPRE
-------------------------------------------------------------
      Percentiles      Smallest
 1%    -.1999999      -.1999999
 5%          -.1            -.1
10%    -.0100001      -.0100001      Obs                  24
25%         .145              0      Sum of Wgt.          24

50%     .3099999                     Mean              .32375
                        Largest       Std. Dev.       .3024798
 75%          .43       .7199999
90%          .73             .73      Variance        .091494
95%          .75             .75      Skewness       .7723583
99%         1.16            1.16      Kurtosis       3.854242


. bysort grupo:ranksum updpre1kgcm2   updpost1kgcm2  upd2kgcm2  updda3kgcm2
DELTAUPDPREPOST DELTAUPDDOSPRE DELTAUPDTRESPR
> E, detail

-------------------------------------------------------------------------------
-------------------------------------------
-> grupo = MEP
too many variables specified
r(103);

. ranksum updpre1kgcm2, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
-------------+---------------------------------
         MEP |       30         840         825
     CONTROL |       24         645         660
-------------+---------------------------------
```

```
    combined |       54        1485        1485

unadjusted variance     3300.00
adjustment for ties       -3.77
                        ----------
adjusted variance       3296.23

Ho: updpre~2(grupo==MEP) = updpre~2(grupo==CONTROL)
             z =   0.261
    Prob > |z| =   0.7939

. ranksum updpost1kgcm2, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
-------------+---------------------------------
         MEP |       30         858         825
     CONTROL |       24         627         660
-------------+---------------------------------
    combined |       54        1485        1485

unadjusted variance     3300.00
adjustment for ties       -4.91
                        ----------
adjusted variance       3295.09

Ho: updpos~2(grupo==MEP) = updpos~2(grupo==CONTROL)
             z =   0.575
    Prob > |z| =   0.5654

. ranksum upd2kgcm2, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
-------------+---------------------------------
         MEP |       30         937         825
     CONTROL |       24         548         660
-------------+---------------------------------
    combined |       54        1485        1485

unadjusted variance     3300.00
```

```
adjustment for ties       -6.42
                     ----------
adjusted variance       3293.58

Ho: upd2kg~2(grupo==MEP) = upd2kg~2(grupo==CONTROL)
             z =   1.952
    Prob > |z| =   0.0510

. ranksum updda3kgcm2, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
-------------+---------------------------------
         MEP |       30         927         825
     CONTROL |       24         558         660
-------------+---------------------------------
    combined |       54        1485        1485

unadjusted variance     3300.00
adjustment for ties       -6.92
                     ----------
adjusted variance       3293.08

Ho: updda3~2(grupo==MEP) = updda3~2(grupo==CONTROL)
             z =   1.777
    Prob > |z| =   0.0755

. ranksum DELTAUPDPREPOST, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
  -----------+---------------------------------
         MEP |       30         847         825
     CONTROL |       24         638         660
  -----------+---------------------------------
    combined |       54        1485        1485

unadjusted variance     3300.00
adjustment for ties       -1.76
                     ----------
adjusted variance       3298.24
```

```
Ho: DELTAU~T(grupo==MEP) = DELTAU~T(grupo==CONTROL)
             z =   0.383
    Prob > |z| =   0.7017

. ranksum DELTAUPDDOSPRE, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
  -----------+---------------------------------
         MEP |       30         897         825
     CONTROL |       24         588         660
  -----------+---------------------------------
    combined |       54        1485        1485

unadjusted variance     3300.00
adjustment for ties       -2.64
                        ----------
adjusted variance       3297.36

Ho: DELTAU..(grupo==MEP) = DELTAU..(grupo==CONTROL)
             z =   1.254
    Prob > |z| =   0.2099

. ranksum DELTAUPDTRESPRE, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
  -----------+---------------------------------
         MEP |       30         859         825
     CONTROL |       24         626         660
  -----------+---------------------------------
    combined |       54        1485        1485

unadjusted variance     3300.00
adjustment for ties       -0.63
                        ----------
adjusted variance       3299.37

Ho: DELTAU..(grupo==MEP) = DELTAU..(grupo==CONTROL)
             z =   0.592
```

```
    Prob > |z| =   0.5539

. bysort grupo:swilk idpre1evamm idpost1evamm id2evamm idda3evamm
DELTAIDPOSTPRE DELTAIDDOSPRE DELTAIDTRESPRE

-------------------------------------------------------------------------------
-------------------------------------------
-> grupo = MEP

                  Shapiro-Wilk W test for normal data

    Variable |    Obs       W           V         z       Prob>z
-------------+--------------------------------------------------
 idpre1evamm |     30    0.95125      1.550     0.906     0.18256
idpost1evamm |     30    0.94528      1.739     1.144     0.12625
    id2evamm |     30    0.96659      1.062     0.125     0.45045
  idda3evamm |     30    0.94067      1.886     1.312     0.09480
DELTAIDPOS~E |     30    0.96762      1.029     0.059     0.47640
DELTAIDDOS~E |     30    0.90787      2.928     2.222     0.01315
DELTAIDTRE~E |     30    0.96509      1.110     0.215     0.41481

-------------------------------------------------------------------------------
-------------------------------------------
-> grupo = CONTROL

                  Shapiro-Wilk W test for normal data

    Variable |    Obs       W           V         z       Prob>z
-------------+--------------------------------------------------
 idpre1evamm |     24    0.97700      0.620    -0.974     0.83489
idpost1evamm |     24    0.96140      1.041     0.082     0.46713
    id2evamm |     24    0.96554      0.929    -0.149     0.55932
  idda3evamm |     24    0.90705      2.507     1.874     0.03045
DELTAIDPOS~E |     24    0.97590      0.650    -0.878     0.81008
DELTAIDDOS~E |     24    0.81556      4.975     3.271     0.00054
DELTAIDTRE~E |     24    0.92705      1.968     1.380     0.08376

. bysort grupo:sum idpre1evamm idpost1evamm id2evamm idda3evamm
DELTAIDPOSTPRE DELTAIDDOSPRE DELTAIDTRESPRE, detail

-------------------------------------------------------------------------------
-------------------------------------------
-> grupo = MEP
```

ID PRE 1 (EVA. mm)

Percentiles		Smallest		
1%	12	12		
5%	12	12		
10%	15	15	Obs	30
25%	21	15	Sum of Wgt.	30
50%	32		Mean	33.6
		Largest	Std. Dev.	13.79555
75%	47	49		
90%	50	51	Variance	190.3172
95%	51	51	Skewness	-.0221884
99%	60	60	Kurtosis	1.854865

ID POST 1 (EVA. mm)

Percentiles		Smallest		
1%	7	7		
5%	7	7		
10%	9.5	8	Obs	30
25%	15	11	Sum of Wgt.	30
50%	23.5		Mean	25.03333
		Largest	Std. Dev.	12.20086
75%	38	40		
90%	40.5	41	Variance	148.8609
95%	43	43	Skewness	.1581778
99%	48	48	Kurtosis	1.760058

ID 2 (EVA. mm)

Percentiles		Smallest		
1%	7	7		
5%	8	8		
10%	9	8	Obs	30
25%	14	10	Sum of Wgt.	30
50%	21		Mean	22.73333
		Largest	Std. Dev.	10.88793
75%	30	36		
90%	38	40	Variance	118.5471

95%	45	45	Skewness	.4615728
99%	45	45	Kurtosis	2.28832

ID día 3 (EVA. mm)

Percentiles		Smallest		
1%	5	5		
5%	5	5		
10%	6.5	5	Obs	30
25%	10	8	Sum of Wgt.	30
50%	19.5		Mean	18.96667
		Largest	Std. Dev.	9.96713
75%	28	30		
90%	30	30	Variance	99.34368
95%	35	35	Skewness	.20909
99%	40	40	Kurtosis	1.904974

DELTAIDPOSTPRE

Percentiles		Smallest		
1%	-23	-23		
5%	-22	-22		
10%	-17.5	-18	Obs	30
25%	-14	-17	Sum of Wgt.	30
50%	-9		Mean	-8.566667
		Largest	Std. Dev.	8.173478
75%	-5	-1		
90%	.5	2	Variance	66.80575
95%	10	10	Skewness	.6031255
99%	12	12	Kurtosis	3.372561

DELTAIDDOSPRE

Percentiles		Smallest		
1%	-30	-30		
5%	-26	-26		
10%	-22	-22	Obs	30
25%	-18	-22	Sum of Wgt.	30
50%	-14		Mean	-10.86667
		Largest	Std. Dev.	11.49433

75%	-5	2		
90%	3	4	Variance	132.1195
95%	10	10	Skewness	1.35135
99%	28	28	Kurtosis	5.713002

DELTAIDTRESPRE

Percentiles		Smallest		
1%	-33	-33		
5%	-31	-31		
10%	-30.5	-31	Obs	30
25%	-24	-30	Sum of Wgt.	30
50%	-15		Mean	-14.63333
		Largest	Std. Dev.	11.7927
75%	-9	1		
90%	1.5	2	Variance	139.0678
95%	5	5	Skewness	.5150803
99%	17	17	Kurtosis	3.165103

-> grupo = CONTROL

ID PRE 1 (EVA. mm)

Percentiles		Smallest		
1%	6	6		
5%	7	7		
10%	10	10	Obs	24
25%	20.5	13	Sum of Wgt.	24
50%	29.5		Mean	31.41667
		Largest	Std. Dev.	15.10519
75%	40	48		
90%	49	49	Variance	228.1667
95%	59	59	Skewness	.1359331
99%	61	61	Kurtosis	2.376209

ID POST 1 (EVA. mm)

Percentiles		Smallest
1%	2	2

5%	3	3		
10%	9	9	Obs	24
25%	13.5	10	Sum of Wgt.	24
50%	23		Mean	24.83333
		Largest	Std. Dev.	15.11598
75%	33.5	42		
90%	48	48	Variance	228.4928
95%	52	52	Skewness	.5737374
99%	59	59	Kurtosis	2.644348

ID 2 (EVA. mm)

Percentiles		Smallest		
1%	3	3		
5%	3	3		
10%	6	6	Obs	24
25%	12	8	Sum of Wgt.	24
50%	24		Mean	23.83333
		Largest	Std. Dev.	14.01138
75%	32.5	35		
90%	40	40	Variance	196.3188
95%	45	45	Skewness	.5143827
99%	60	60	Kurtosis	3.103797

ID día 3 (EVA. mm)

Percentiles		Smallest		
1%	3	3		
5%	3	3		
10%	4	4	Obs	24
25%	10.5	6	Sum of Wgt.	24
50%	18.5		Mean	19.95833
		Largest	Std. Dev.	13.22869
75%	25.5	34		
90%	34	34	Variance	174.9982
95%	41	41	Skewness	1.162349
99%	60	60	Kurtosis	4.691994

DELTAIDPOSTPRE

	Percentiles	Smallest		
1%	-29	-29		
5%	-16	-16		
10%	-15	-15	Obs	24
25%	-11.5	-15	Sum of Wgt.	24
50%	-7		Mean	-6.583333
		Largest	Std. Dev.	8.632178
75%	-.5	2		
90%	3	3	Variance	74.51449
95%	7	7	Skewness	-.260452
99%	11	11	Kurtosis	3.466838

DELTAIDDOSPRE

	Percentiles	Smallest		
1%	-21	-21		
5%	-19	-19		
10%	-18	-18	Obs	24
25%	-15	-18	Sum of Wgt.	24
50%	-10.5		Mean	-7.583333
		Largest	Std. Dev.	12.1115
75%	-4.5	2		
90%	7	7	Variance	146.6884
95%	13	13	Skewness	1.905437
99%	34	34	Kurtosis	6.987127

DELTAIDTRESPRE

	Percentiles	Smallest		
1%	-28	-28		
5%	-27	-27		
10%	-26	-26	Obs	24
25%	-21.5	-26	Sum of Wgt.	24
50%	-14		Mean	-11.45833
		Largest	Std. Dev.	13.11812
75%	-3	-1		
90%	9	9	Variance	172.0851
95%	15	15	Skewness	.8250901
99%	20	20	Kurtosis	2.989924

```
. bysort grupo:tabstat idpre1evamm, s(med iqr)

-------------------------------------------------------------------------------
-----------------------------------------
-> grupo = MEP

    variable |       p50       iqr
  -----------+--------------------
 idpre1evamm |        32        26
  ----------------------------------

-------------------------------------------------------------------------------
-----------------------------------------
-> grupo = CONTROL

    variable |       p50       iqr
  -----------+--------------------
 idpre1evamm |      29.5      19.5
  ----------------------------------

. bysort grupo:tabstat idpre1evamm, s(med p25 p75)

-------------------------------------------------------------------------------
-----------------------------------------
-> grupo = MEP

    variable |       p50       p25       p75
  -----------+------------------------------
 idpre1evamm |        32        21        47
  ---------------------------------------------

-------------------------------------------------------------------------------
  ---------------------------------------------
-> grupo = CONTROL

    variable |       p50       p25       p75
  -----------+------------------------------
 idpre1evamm |      29.5      20.5        40
  ---------------------------------------------

. ranksum idpre1evamm, by(grupo)
```

```
Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
  -----------+---------------------------------
         MEP |       30         865         825
     CONTROL |       24         620         660
  -----------+---------------------------------
    combined |       54        1485        1485

unadjusted variance     3300.00
adjustment for ties       -5.41
                       ----------
adjusted variance       3294.59

Ho: idpre1~m(grupo==MEP) = idpre1~m(grupo==CONTROL)
             z =   0.697
    Prob > |z| =   0.4859

. ranksum idpost1evamm, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
-------------+---------------------------------
         MEP |       30         837         825
     CONTROL |       24         648         660
-------------+---------------------------------
    combined |       54        1485        1485

unadjusted variance     3300.00
adjustment for ties       -7.04
                       ----------
adjusted variance       3292.96

Ho: idpost~m(grupo==MEP) = idpost~m(grupo==CONTROL)
             z =   0.209
    Prob > |z| =   0.8344

. ranksum id2evamm, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
```

```
  ------------+---------------------------------
          MEP |        30          814          825
      CONTROL |        24          671          660
  ------------+---------------------------------
     combined |        54         1485         1485

unadjusted variance      3300.00
adjustment for ties        -6.79
                         ----------
adjusted variance        3293.21

Ho: id2evamm(grupo==MEP) = id2evamm(grupo==CONTROL)
              z =  -0.192
    Prob > |z| =   0.8480

. ranksum idda3evamm, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
-------------+---------------------------------
          MEP |        30          832          825
      CONTROL |        24          653          660
-------------+---------------------------------
     combined |        54         1485         1485

unadjusted variance      3300.00
adjustment for ties        -7.17
                         ----------
adjusted variance        3292.83

Ho: idda3e~m(grupo==MEP) = idda3e~m(grupo==CONTROL)
              z =   0.122
    Prob > |z| =   0.9029

. ranksum DELTAIDPOSTPRE, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
-------------+---------------------------------
          MEP |        30       759.5          825
      CONTROL |        24       725.5          660
```

```
  ------------+---------------------------------
    combined |       54        1485        1485

unadjusted variance     3300.00
adjustment for ties      -10.69
                       ----------
adjusted variance       3289.31

Ho: DEL~TPRE(grupo==MEP) = DEL~TPRE(grupo==CONTROL)
             z =  -1.142
    Prob > |z| =   0.2534

. ranksum DELTAIDDOSPRE, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
  ------------+---------------------------------
         MEP |       30       759.5         825
     CONTROL |       24       725.5         660
  ------------+---------------------------------
    combined |       54        1485        1485

unadjusted variance     3300.00
adjustment for ties      -10.57
                       ----------
adjusted variance       3289.43

Ho: DELTAI..(grupo==MEP) = DELTAI..(grupo==CONTROL)
             z =  -1.142
    Prob > |z| =   0.2534

. ranksum DELTAIDTRESPRE, by(grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
  ------------+---------------------------------
         MEP |       30         786         825
     CONTROL |       24         699         660
  ------------+---------------------------------
    combined |       54        1485        1485
```

```
unadjusted variance      3300.00
adjustment for ties        -6.29
                        ----------
adjusted variance        3293.71

Ho: DELTAI..(grupo==MEP) = DELTAI..(grupo==CONTROL)
              z =  -0.680
    Prob > |z| =   0.4968

. h constant comparative

. gen UPD11MEP=.
(54 missing values generated)

. replace UPD11MEP= DELTAUPDPREPOST if  grupo==1
(30 real changes made)

. drop UPD11MEP

. gen UPDPREMEP=.
(54 missing values generated)

. gen UPDPREMEP= updpre1kgcm2 if grupo==1
UPDPREMEP already defined
r(110);

. replace UPDPREMEP= updpre1kgcm2 if grupo==1
(30 real changes made)

. gen UPDPOSTMEP= updpost1kgcm2 if grupo==1
(24 missing values generated)

. gen UPD2MEP= upd2kgcm2 if grupo==1
(24 missing values generated)

. gen UPD3MEP = updda3kgcm2 if grupo==1
(24 missing values generated)

. by(grupo):signrank DELTAUPDPREPOST
invalid syntax
r(198);

. h signrank
```

```
. signrank  updpre1kgcm2= updpost1kgcm2

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
   -----------+---------------------------------
     positive |        7       131.5         741
     negative |       45      1350.5         741
         zero |        2           3           3
--------------+---------------------------------
          all |       54        1485        1485

unadjusted variance    13488.75
adjustment for ties       -2.00
adjustment for zeros      -1.25
                     ----------
adjusted variance      13485.50

Ho: updpre1kgcm2 = updpost1kgcm2
              z =  -5.249
     Prob > |z| =   0.0000

. signrank UPDPREMEP= UPDPOSTMEP

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
--------------+---------------------------------
     positive |        5          54       232.5
     negative |       25         411       232.5
         zero |        0           0           0
--------------+---------------------------------
          all |       30         465         465

unadjusted variance     2363.75
adjustment for ties       -0.25
adjustment for zeros       0.00
                     ----------
adjusted variance       2363.50

Ho: UPDPREMEP = UPDPOSTMEP
              z =  -3.672
```

```
    Prob > |z| =   0.0002

. bysort grupo:signrank updpre1kgcm2= updpost1kgcm2

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
  ------------+---------------------------------
     positive |        5          54       232.5
     negative |       25         411       232.5
         zero |        0           0           0
  ------------+---------------------------------
          all |       30         465         465

unadjusted variance     2363.75
adjustment for ties       -0.25
adjustment for zeros       0.00
                     ----------
adjusted variance       2363.50

Ho: updpre1kgcm2 = updpost1kgcm2
              z =  -3.672
    Prob > |z| =   0.0002

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
  ------------+---------------------------------
     positive |        2          15       148.5
     negative |       20         282       148.5
         zero |        2           3           3
  ------------+---------------------------------
          all |       24         300         300

unadjusted variance     1225.00
```

```
adjustment for ties       -0.12
adjustment for zeros      -1.25
                     ----------
adjusted variance       1223.62

Ho: updpre1kgcm2 = updpost1kgcm2
              z =  -3.816
    Prob > |z| =   0.0001

. bysort grupo:tabstat DELTAUPDPREPOST, s(med p25 p75)

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

    variable |       p50       p25       p75
-------------+------------------------------
DELTAUPDPR~T |       .17  .0500001       .34
-------------------------------------------

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

    variable |       p50       p25       p75
-------------+------------------------------
DELTAUPDPR~T |      .135      .045      .265
-------------------------------------------

. bysort grupo:signrank updpre1kgcm2= upd2kgcm2

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
  ------------+---------------------------------
     positive |        4          13       232.5
     negative |       26         452       232.5
         zero |        0           0           0
  ------------+---------------------------------
```

```
         all |       30         465         465

unadjusted variance     2363.75
adjustment for ties       -0.38
adjustment for zeros       0.00
                        ----------
adjusted variance       2363.38

Ho: updpre1kgcm2 = upd2kgcm2
              z =  -4.515
    Prob > |z| =   0.0000

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
--------------+---------------------------------
     positive |        2          16         150
     negative |       22         284         150
         zero |        0           0           0
--------------+---------------------------------
          all |       24         300         300

unadjusted variance     1225.00
adjustment for ties       -0.25
adjustment for zeros       0.00
                        ----------
adjusted variance       1224.75

Ho: updpre1kgcm2 = upd2kgcm2
              z =  -3.829
    Prob > |z| =   0.0001

. bysort grupo:tabstat DELTAUPDDOSPRE, s(med p25 p75)

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

    variable |       p50       p25       p75
```

```
-------------+------------------------------
DELTAUPDDO~E |         .3         .1   .4899999
-------------------------------------------

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

    variable |       p50       p25       p75
-------------+------------------------------
DELTAUPDDO~E |       .19      .105       .29
-------------------------------------------

. bysort grupo:signrank updpre1kgcm2=updda3kgcm2

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
  ------------+---------------------------------
     positive |        0           0       232.5
     negative |       30         465       232.5
         zero |        0           0           0
  ------------+---------------------------------
          all |       30         465         465

unadjusted variance     2363.75
adjustment for ties       -0.25
adjustment for zeros       0.00
                     ----------
adjusted variance       2363.50

Ho: updpre1kgcm2 = updda3kgcm2
              z =  -4.782
    Prob > |z| =   0.0000

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL
```

```
Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
  ------------+--------------------------------
     positive |        3          14       149.5
     negative |       20         285       149.5
         zero |        1           1           1
  ------------+--------------------------------
          all |       24         300         300

unadjusted variance     1225.00
adjustment for ties       -0.12
adjustment for zeros      -0.25
                       ----------
adjusted variance       1224.62

Ho: updpre1kgcm2 = updda3kgcm2
              z =  -3.872
    Prob > |z| =   0.0001

. bysort grupo:tabstat DELTAUPDTRESPRE, s(med p25 p75)

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

    variable |       p50       p25       p75
-------------+------------------------------
DELTAUPDTR~E |      .335       .13       .52
-------------------------------------------

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

    variable |       p50       p25       p75
-------------+------------------------------
DELTAUPDTR~E |  .3099999      .145       .43
-------------------------------------------

. bysort grupo:signrank idpre1evamm= idpost1evamm
```

```
-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
  ------------+---------------------------------
     positive |       27         426       232.5
     negative |        3          39       232.5
         zero |        0           0           0
  ------------+---------------------------------
          all |       30         465         465

unadjusted variance     2363.75
adjustment for ties       -2.62
adjustment for zeros       0.00
                     ----------
adjusted variance       2361.12

Ho: idpre1evamm = idpost1evamm
              z =   3.982
    Prob > |z| =   0.0001

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
  ------------+---------------------------------
     positive |       18         258       148.5
     negative |        4          39       148.5
         zero |        2           3           3
  ------------+---------------------------------
          all |       24         300         300

unadjusted variance     1225.00
adjustment for ties       -1.25
adjustment for zeros      -1.25
                     ----------
adjusted variance       1222.50
```

```
Ho: idpre1evamm = idpost1evamm
              z =   3.132
    Prob > |z| =   0.0017

. bysort grupo:tabstat DELTAIDPOSTPRE, s(med p25 p75)

------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

    variable |       p50       p25       p75
-------------+------------------------------
DELTAIDPOS~E |        -9       -14        -5
-------------------------------------------

------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

    variable |       p50       p25       p75
-------------+------------------------------
DELTAIDPOS~E |        -7     -11.5       -.5
-------------------------------------------

. bysort grupo:tabstat DELTAIDDOSPRE, s(med p25 p75)

------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

    variable |       p50       p25       p75
-------------+------------------------------
DELTAIDDOS~E |       -14       -18        -5
-------------------------------------------

------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

    variable |       p50       p25       p75
-------------+------------------------------
DELTAIDDOS~E |     -10.5       -15      -4.5
```

```
-------------------------------------------

. bysort grupo:tabstat DELTAIDTRESPRE, s(med p25 p75)

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

    variable |       p50       p25       p75
-------------+------------------------------
DELTAIDTRE~E |       -15       -24        -9
-------------------------------------------

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

    variable |       p50       p25       p75
-------------+------------------------------
DELTAIDTRE~E |       -14     -21.5        -3
-------------------------------------------

. bysort grupo:signrank idpre1evamm= id2evamm

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
  ------------+---------------------------------
     positive |       26         421       232.5
     negative |        4          44       232.5
         zero |        0           0           0
  ------------+---------------------------------
          all |       30         465         465

unadjusted variance     2363.75
adjustment for ties       -2.62
adjustment for zeros       0.00
                     ----------
adjusted variance       2361.12
```

```
Ho: idpre1evamm = id2evamm
              z =   3.879
     Prob > |z| =   0.0001

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
  ------------+--------------------------------
     positive |       20         255         150
     negative |        4          45         150
         zero |        0           0           0
  ------------+--------------------------------
          all |       24         300         300

unadjusted variance     1225.00
adjustment for ties       -2.12
adjustment for zeros       0.00
                     ----------
adjusted variance       1222.88

Ho: idpre1evamm = id2evamm
              z =   3.003
     Prob > |z| =   0.0027

. bysort grupo:signrank idpre1evamm= idda3evamm

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
  ------------+--------------------------------
     positive |       26       440.5       232.5
     negative |        4        24.5       232.5
         zero |        0           0           0
  ------------+--------------------------------
```

```
         all |       30         465         465

unadjusted variance     2363.75
adjustment for ties       -1.25
adjustment for zeros       0.00
                     ----------
adjusted variance       2362.50

Ho: idpre1evamm = idda3evamm
              z =   4.279
    Prob > |z| =   0.0000

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

Wilcoxon signed-rank test

         sign |      obs   sum ranks    expected
--------------+---------------------------------
     positive |       21       264.5         150
     negative |        3        35.5         150
         zero |        0           0           0
--------------+---------------------------------
          all |       24         300         300

unadjusted variance     1225.00
adjustment for ties       -1.12
adjustment for zeros       0.00
                     ----------
adjusted variance       1223.88

Ho: idpre1evamm = idda3evamm
              z =   3.273
    Prob > |z| =   0.0011

. graph box DELTAUPDPREPOST DELTAUPDDOSPRE DELTAUPDTRESPRE, over(grupo)

. bysort grupo:swilk distanciapec7cruzcm

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP
```

```
                    Shapiro-Wilk W test for normal data

    Variable |    Obs       W           V         z       Prob>z
   ----------+-------------------------------------------------
distanciap~m |     30    0.81605      5.847     3.651    0.00013

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

                    Shapiro-Wilk W test for normal data

    Variable |    Obs       W           V         z       Prob>z
-------------+-------------------------------------------------
distanciap~m |     24    0.98106      0.511    -1.370    0.91462

. bysort grupo:tabstat distanciapec7cruzcm, s(med p25 p75)

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = MEP

    variable |       p50       p25       p75
  -----------+------------------------------
distanciap~m |       8.6       7.8       9.5
  ----------------------------------------

-------------------------------------------------------------------------------
-------------------------------------
-> grupo = CONTROL

    variable |       p50       p25       p75
  -----------+------------------------------
distanciap~m |      8.35      7.25      9.85
  ----------------------------------------

. ranksum distanciapec7cruzcm, by( grupo)

Two-sample Wilcoxon rank-sum (Mann-Whitney) test

       grupo |      obs    rank sum    expected
-------------+---------------------------------
```

```
         MEP |        30          856          825
     CONTROL |        24          629          660
  -----------+---------------------------------
    combined |        54         1485         1485

unadjusted variance      3300.00
adjustment for ties       -12.20
                     ----------
adjusted variance        3287.80

Ho: distan~m(grupo==MEP) = distan~m(grupo==CONTROL)
              z =   0.541
    Prob > |z| =   0.5888

.
```