Calciphylaxis - preliminary analyses

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This is a summary report for the calciphylaxis data prior to ERA-EDTA. This analysis was run on 14 September, 2016.

Summary of baseline data

This analysis includes 71 baseline records for patients recruited between 14 September, 2012 and 23 May, 2016.

Demographics

Gender data were available for 61 patients. Of these, 27 (44.3%) were male and 34 (55.7%) were female.

The distribution of age data approximated normality (Shapiro test p=0.1). Mean age was 58.2 ± 58.2 years (57.6 males, 58.6 females, p = 0.76). Age data were missing for 10 patients.

Ethnicity is not considered in this analysis as only 11 patients are coded as non-Caucasian (of whom 7 have missing data. Weight and BMI data are not described due to limited information being present (weight data missing in 38; BMI data missing in 39).

Date of diagnosis of calciphlaxis is documented for 62 patients. Time from diagnosis to consent ranges from 0 to 364 days.

Renal status

Data on renal background were availabe for 61 patients (85.9%). The earliest documented occurance of or organ support was 01 January, 1900 with the most recent occuring at 25 September, 2015.

The median time between ESRD / organ support and consent to the study was 1020 days (range 0 to 42275 days).

Most patients with a documented renal status were on haemodialysis / haemodiafiltration :

Renal status	Number
CKD3b	1
CKD4	1
CKD5	6
HD/HDF	42
PD	7
Transplant	4

Of the 4 patients with a Transplant, 4 had a history of either haemodialysis / haemodiafiltration or peritoneal dialysis.

Of the 42 patients on haemodialysis or haemodiafiltration, data on dialysis sessions / hours were missing for 0 patients. At the time of consent, most patients were on a standard prescription for time on dialysis:

Mins / sessions	2	3	4	5	6	7
180	0	2	1	0	2	0
195	0	1	0	0	0	0
210	0	1	0	1	0	0
240	1	26	3	0	1	1
270	0	1	0	0	0	0
330	0	1	0	0	0	0

Dialysate calcium concentrations ranged from 1 to 1.75 mmol/L, with a median value of 1.25 mmol/L (IQR 1.25 - 1.5).

Baseline co-morbidity

Comorbidity	n= missing data	n = present	Percentage with data	Percentage of all patients
HeartDisease	8	17	27	23.9
MI	7	7	10.9	9.9
Cerebrovascular	7	6	9.4	8.5
PeripheralvascularDisease	7	9	14.1	12.7
Diabetes	7	40	62.5	56.3
ArterialHypertension	7	42	65.6	59.2
BoneFractures	7	9	14.1	12.7
Parathyroid	7	9	14.1	12.7

Biochemistry	n= missing data	Mean	SD	Median	25th	75th
Creatinine	7	558.5	259.2	538	381.25	741.25
Calcium	10	8.9	36.7	2.2	2.11	2.41
CorrectedCalcium	9	2.4	0.2	2.5	2.2725	2.5775
Phosphate	7	1.7	0.6	1.7	1.2675	2.035
TotalProtein	36	60.2	8.1	60	56	66
Albumin	7	30.2	6.7	31	26	35
AlkalinePhosphatise	9	183.6	122	143.5	103.5	224
iPTH	22	109.6	167	57	23	126
PTH	64	88.9	153.5	27	7	79
CRP	14	101.9	87.3	82	28	160

Contributory factors

Risk factor	n= missing data	n = present	Percentage with data	Percentage of all patients
VitaminD	7	43	67.2	60.6
PhosphateBinders	7	43	67.2	60.6
Calcimimetics	10	14	23	19.7
Calcimimetics_VitaminK	7	24	37.5	33.8
Calcimimetics_ACEARBs	8	15	23.8	21.1
Calcimimetics_Erythropoetins	8	41	65.1	57.7
NA	NA	NA	NA	NA

Of the 43 patients prescribed a phosphate binder, 15 were prescribed a calcium containing drug.

Method of diagnosis

The diagnosis of calciphlyaxis was made as below:

Mode of diagnosis	n= missing data	n = diagnosed this way	Percentage with data	Percentage of all patients
ClinicaIimpression	9	55	88.7	77.5
Wound	9	31	50	43.7
SkinBiopsy	9	30	48.4	42.3
RadiographOfSoftTissue	9	8	12.9	11.3
NuclearMedicineBoneScan	9	0	0	0
TranscutaneousOxygen	9	0	0	0

Of the 55 patients with a clinical diagnosis, 39 (70.9%) had this diagnosis confirmed by either wound or skin biopsy.

The location of lesions was:

Mode of diagnosis	n= missing data	n = diagnosed this way	Percentage with data	Percentage of all patients
Abdomen	9	10	16.1	14.1
Thighs	9	19	30.6	26.8
buttock	9	7	11.3	9.9
PenisVulvar	9	4	6.5	5.6
Breasts	9	2	3.2	2.8
LowerExtremities	9	37	59.7	52.1
FeetToes	9	4	6.5	5.6
Back	10	2	3.3	2.8
Arms	9	1	1.6	1.4
HandsFingers	10	4	6.6	5.6

The majority of patients had a single lesion:

1 lesion	2 lesions	3 lesions
40	15	5

Follow up data

Several issues need thinking about

1 - time data are available for lesion resolution (subjective), but not for death. This will limit survival analyses

2 - later analyses need to account for the fact that death is a competing risk for lesion resolution

3 - how is lesion resolution defined? e.g. patent 6 has two lesions at baseline. One seems to have resolved at the first follow up point and the second at the second follow up point. The coding for these follow up visits is non-resolution / resolution respectively.The assumption based on this is that only full resolution should be coded. This may impact senstivity.

4 - for follow up visits, should we use LOCF. eg patient 15 is coded as having binders changed as an intervention at their first follow up. However, at the second follow up this field is coded as a negative. One interpretation is that they went back to their original binder regime.

5 - data cleaning for follow input. eg patient 15 has 2 follow up datasets with the same date of entry. Presume data entry error as patient died

6 - data cleaning / validation required. Patient 7 has parathyroid surgery coded as an intervention but these are the same data as in the baseline table. Will need to review interventions to ensure they are appropriately coded.

7 - needs discussion with trial nurses regarding date values for follow up visits. eg patient 48 has 8 follow up visits but the date values are non-sequential. Is this a data capture issue or are the date values correct and the follow up data need re-ordering?

Association of baseline characteristics with mortality

Baseline crosssectional analysis on survival was performed on 38 patients who had complete baseline data and documented survival status.