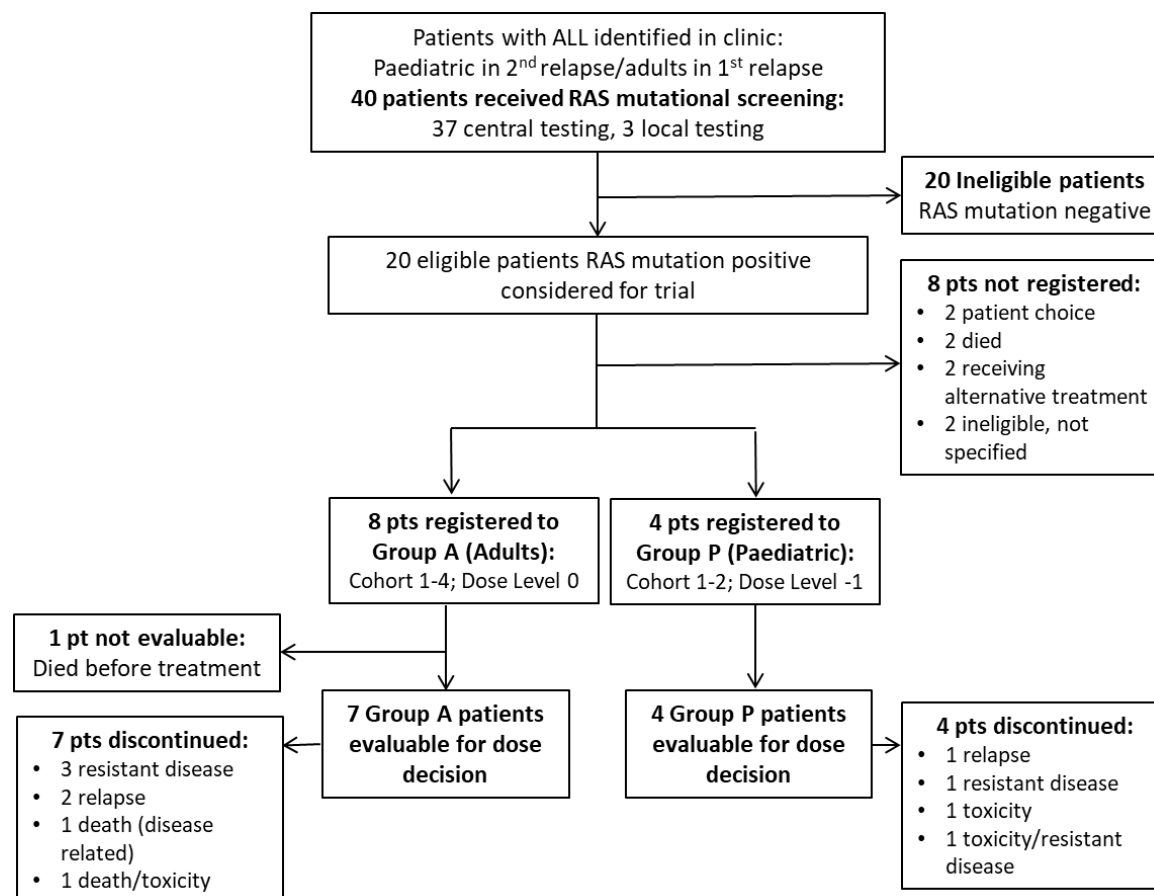


Participant Flow



1. Baseline Characteristics

Table 1: Baseline Characteristics

Characteristic	Number of Patients			
	Group A N=8	Group P N=4	Total N=12	
Sex (%)				
	Male	7 (88)	1 (25)	10 (83)
	Female	1 (13)	3 (75)	2 (17)
Age (years)				
	Mean (sd)	50 (23)	10 (3)	36 (27)
	Median	58	10	25
	IQR	25, 69	7, 12	12, 68
	Range	21, 73	5, 13	5, 73
Ethnicity (%)				
	Any other Asian background	1 (13)	0	1 (8.3)
	Any other ethnic group	1 (13)	0	1 (8.3)
	Arab	0	1 (25)	1 (8.3)
	Bangladeshi	1 (13)	0	1 (8.3)
	Caribbean	0	1 (25)	1 (8.3)
	English/Welsh/Scottish/Northern Irish/British	5 (63)	2 (50)	7 (58)
ECOG Performance Status (%)				
	0	1 (17)	0	1 (17)
	1	4 (67)	0	4 (67)
	2	1 (17)	0	1 (17)
	Unknown	2	4	6
Current ALL disease status (%)				
	Progressive	1 (13)	0	1 (8.3)
	Refractory	2 (25)	0	2 (17)
	Relapsed	5 (63)	4 (100)	9 (75)
	Total	8	4	12
CNS disease status at diagnosis (%)				
	CNS1	4 (80)	3 (75)	7 (78)
	CNS2	1 (20)	0	1 (11)
	CNS3	0	1 (25)	1 (11)
	Unknown	3	0	3
Previously received CAR T cell therapy (%)				
	No	7 (88)	2 (50)	9 (75)
	Yes	1 (13)	2 (50)	3 (25)

Characteristic		Number of Patients		
		Group A N=8	Group P N=4	Total N=12
Previously received HSCT (%)				
	No	7 (88)	0	7 (58)
	Yes	1 (13)	4 (100)	5 (42)
ALL classification (%)				
	B-cell precursor ALL	2 (25)	4 (100)	6 (50)
	T-ALL	6 (75)	0	6 (50)
Bone marrow blast score (%)				
	M2	1 (14)	1 (25)	2 (18)
	M3	6 (86)	3 (75)	9 (82)
	Unknown	1	0	1
Cellularity (%)				
	Hypercellular	3 (50)	2 (50)	5 (50)
	Hypocellular	0	2 (50)	2 (20)
	Normocellular	3 (50)	0	3 (30)
	Unknown	2	0	2
CNS disease classification in CSF (%)				
	CNS1	7 (100)	3 (75)	10 (91)
	CNS3	0	1 (25)	1 (9.1)
	Unknown	1	0	0
Weight (kg)				
	Mean (sd)	84 (22)	38 (14)	69 (29)
	Median	81	35	67
	IQR	67, 94	28, 49	49, 87
	Range	56, 128	27, 57	27, 128
Height (metre)				
	Mean (sd)	1.75 (0.09)	1.41 (0.17)	1.64 (0.20)
	Median	1.74	1.45	1.71
	IQR	1.71, 1.82	1.30, 1.52	1.52, 1.77
	Range	1.60, 1.89	1.17, 1.57	1.17, 1.89
Body Surface Area				
	Mean (sd)	2.00 (0.30)	1.24 (0.28)	1.75 (0.47)
	Median	1.97	1.19	1.79
	IQR	1.79, 2.13	1.02, 1.45	1.45, 2.01
	Range	1.65, 2.60	0.96, 1.60	0.96, 2.60

2. Outcome Measures

2.1 Primary Outcome

2.1.1 Dose Limiting Toxicities and Continual Reassessment Model (CRM) Dose Decision

Table 2: Patient dose allocations and outcome.

Group	Cohort	Dose Level	Selumetinib Dose	DLT
A	1	0	75mg	No
A	1	0	75mg	No
A	2	0	75mg	No
A	2	0	75mg	Yes
A	3	0	75mg	No
A	3	0	75mg	No
A	4	0	75mg	No
P	1	-1	20mg/m ²	No
P	1	-1	20mg/m ²	Yes
P	2	-1	20mg/m ²	No
P	2	-1	20mg/m ²	No

Each row of the table represents an individual patient.

Table 3: Prior and final posterior probabilities of DLTs in Groups A and P.

Group	Dose Level	Prior Prob (DLT)	Number of Evaluable Patients	Number of DLTs	Posterior Prob (DLT)
A	-1	0.03	0	0	0.031 (0.001, 0.192)
A	0	0.15	7	1	0.154 (0.02, 0.41)
A	1	0.27	0	0	0.275 (0.067, 0.54)
P	-1	0.03	4	1	0.207 (0.022, 0.52)
P	0	0.15	0	0	0.426 (0.128, 0.702)
P	1	0.27	0	0	0.555 (0.242, 0.784)

2.2 Secondary Outcomes

2.2.1 Pharmacokinetics (PK)

Table 4: Pharmacokinetic results by Group for selumetinib in combination with dexamethasone at Cycle 1 Day 4.

	Group A N=7	Group P N=4	Overall N=11
AUC			
Median (Q1, Q3)	4,514 (3,586, 5,270)	1,407 (588, 2,226)	4,017 (2,666, 4,925)
Mean (SD)	4,418 (936)	1,407 (1,158)	3,665 (1,662)
Min, Max	3,105, 5,520	588, 2,226	588, 5,520
Unknown	1	2	3
Cmax			
Median (Q1, Q3)	1,470 (1,000, 2,080)	474 (237, 711)	1,450 (711, 1,632)
Mean (SD)	1,512 (577)	474 (335)	1,281 (688)
Min, Max	642, 2,310	237, 711	237, 2,310
Unknown	0	2	2
Tmax			
Median (Q1, Q3)	1.00 (1.00, 1.10)	1.95 (1.90, 2.00)	1.00 (1.00, 1.80)
Mean (SD)	1.11 (0.31)	1.95 (0.07)	1.30 (0.46)
Min, Max	0.90, 1.80	1.90, 2.00	0.90, 2.00
Unknown	0	2	2
THalf			
Median (Q1, Q3)	1.95 (1.70, 2.10)	1.30 (1.20, 1.40)	1.80 (1.35, 2.05)
Mean (SD)	1.85 (0.31)	1.30 (0.14)	1.71 (0.37)
Min, Max	1.30, 2.10	1.20, 1.40	1.20, 2.10
Unknown	1	2	3

Table 5: Pharmacokinetic results by Group for selumetinib in combination with dexamethasone at Cycle 2 Day 1.

	Group A N=5	Group P N=3	Overall N=8
AUC			
Median (Q1, Q3)	5,265 (2,962, 5,576)	1,426 (720, 2,801)	2,882 (1,799, 5,421)
Mean (SD)	4,872 (2,447)	1,649 (1,058)	3,664 (2,554)
Min, Max	2,171, 8,387	720, 2,801	720, 8,387
Cmax			
Median (Q1, Q3)	1,020 (777, 1,130)	610 (137, 798)	788 (670, 1,075)
Mean (SD)	1,097 (442)	515 (341)	879 (485)
Min, Max	730, 1,830	137, 798	137, 1,830
Tmax			
Median (Q1, Q3)	1.00 (1.00, 2.00)	1.90 (0.90, 2.00)	1.45 (1.00, 2.00)
Mean (SD)	1.80 (1.30)	1.60 (0.61)	1.73 (1.04)
Min, Max	1.00, 4.00	0.90, 2.00	0.90, 4.00
THalf			

Median (Q1, Q3)	2.30 (2.00, 2.90)	2.60 (1.40, 3.10)	2.45 (1.90, 3.00)
Mean (SD)	2.50 (0.70)	2.37 (0.87)	2.45 (0.71)
Min, Max	1.80, 3.50	1.40, 3.10	1.40, 3.50

Table 6: Pharmacokinetic results by Group for selumetinib alone at Cycle 1 Day 1.

	Group A N=7	Group P N=4	Overall N=11
AUC			
Median (Q1, Q3)	4,698 (2,933, 6,843)	1,199 (645, 1,257)	3,192 (1,257, 5,335)
Mean (SD)	4,786 (1,854)	1,034 (338)	3,661 (2,367)
Min, Max	2,815, 7,429	645, 1,257	645, 7,429
Unknown	0	1	1
Cmax			
Median (Q1, Q3)	891 (763, 1,430)	308 (214, 487)	802 (487, 977)
Mean (SD)	1,020 (331)	336 (139)	815 (432)
Min, Max	699, 1,540	214, 487	214, 1,540
Unknown	0	1	1
Tmax			
Median (Q1, Q3)	1.10 (1.00, 2.00)	1.00 (0.90, 1.80)	1.05 (1.00, 2.00)
Mean (SD)	1.44 (0.52)	1.23 (0.49)	1.38 (0.50)
Min, Max	1.00, 2.00	0.90, 1.80	0.90, 2.00
Unknown	0	1	1
THalf			
Median (Q1, Q3)	6.50 (4.50, 6.80)	4.00 (1.40, 7.60)	6.40 (4.00, 6.80)
Mean (SD)	6.04 (1.33)	4.33 (3.11)	5.53 (2.01)
Min, Max	3.90, 7.60	1.40, 7.60	1.40, 7.60
Unknown	0	1	1

Table 7: Pharmacokinetic results by Group for dexamethasone at Cycle 1 Day 4.

	Group A N=7	Group P N=3	Overall N=10
AUC			
Median (Q1, Q3)	1,187 (663, 1,379)	389 (388, 389)	663 (389, 1,379)
Mean (SD)	1,055 (454)	389 (1)	865 (493)
Min, Max	500, 1,546	388, 389	388, 1,546
Unknown	2	1	3
Cmax			
Median (Q1, Q3)	114 (94, 151)	94 (78, 110)	110 (94, 133)
Mean (SD)	116 (41)	94 (23)	111 (38)
Min, Max	47, 174	78, 110	47, 174
Unknown	0	1	1
Tmax			
Median (Q1, Q3)	2.50 (0.90, 4.10)	1.50 (1.10, 1.90)	2.00 (1.10, 3.80)
Mean (SD)	3.11 (2.54)	1.50 (0.57)	2.76 (2.32)

Min, Max	0.50, 8.00	1.10, 1.90	0.50, 8.00
Unknown	0	1	1
THalf			
Median (Q1, Q3)	6.80 (4.50, 7.00)	2.45 (2.30, 2.60)	4.50 (2.30, 7.00)
Mean (SD)	6.08 (3.09)	2.45 (0.21)	5.04 (3.09)
Min, Max	1.90, 10.20	2.30, 2.60	1.90, 10.20
Unknown	2	1	3

Table 8: Pharmacokinetic results by Group for dexamethasone at Cycle 2 Day 1.

	Group A N=5	Group P N=3	Overall N=8
AUC			
Median (Q1, Q3)	286 (286, 286)	291 (239, 342)	286 (239, 342)
Mean (SD)	286 (NA)	291 (73)	289 (52)
Min, Max	286, 286	239, 342	239, 342
Unknown	4	1	5
Cmax			
Median (Q1, Q3)	42 (34, 46)	67 (22, 74)	44 (28, 64)
Mean (SD)	40 (17)	54 (29)	45 (21)
Min, Max	16, 62	22, 74	16, 74
Tmax			
Median (Q1, Q3)	2.00 (1.00, 7.70)	1.00 (0.90, 1.00)	1.00 (1.00, 4.85)
Mean (SD)	3.94 (3.59)	0.97 (0.06)	2.83 (3.12)
Min, Max	1.00, 8.00	0.90, 1.00	0.90, 8.00
THalf			
Median (Q1, Q3)	2.50 (2.50, 2.50)	2.60 (2.30, 2.90)	2.50 (2.30, 2.90)
Mean (SD)	2.50 (NA)	2.60 (0.42)	2.57 (0.31)
Min, Max	2.50, 2.50	2.30, 2.90	2.30, 2.90
Unknown	4	1	5

Table 9: Absolute and percentage difference in AUC for selumetinib single agent and in combination with dexamethasone.

Group	AUC - single agent	AUC	Difference	% Difference	AUC	Difference	% Difference
A	7429	4447	-2982	60	5576	-1853	75
A	2815	3105	290	110	2171	-644	77
A	2933	3586	653	122	2962	29	101
A	4698	4580	-118	97			
P	645				720	75	112
P		2226					
A	6843	5270	-1573	77	5265	-1578	77
A	3451	5520	2069	160	8387	4936	243
A	5335						
P	1199	588	-611	49	2801	1602	234
P	1257				1426	169	113

Each row of the table represents an individual patient.

2.2.2 Response

Table 10: Response at Cycle 1 Day 28 for each patient.

Group	Cohort	Dose Level	Response
A	1	0	NR
A	1	0	NR
A	2	0	CRi
A	3	0	CRi
A	3	0	CR
A	4	0	NR
P	1	-1	NR
P	2	-1	CR
P	2	-1	NR

Each row of the table represents an individual patient.

Complete remission (CR); Complete remission with incomplete platelet recovery (CRi); Partial remission (PR); No response (NR)

Table 11: Summary of response at Cycle 1 Day 28.

Response	Group A (%)	Group P (%)	Total (%)
n	6	3	9
NR	3 (50)	2 (67)	5 (56)
PR	0	0	0
CRi	2 (33)	0	2 (22)
CR	1 (17)	1 (33)	2 (22)

2.3 Tertiary Outcomes

- **Exploratory pharmacodynamic (PD) biomarker studies will be undertaken if clinical responses are observed.**

Due to the early stopping of the trial and a lack of patient samples, the data required for assessing the pharmacodynamic effects was unavailable.

3. Adverse Events

Table 12: Adverse events by group according to CTCAE v4.0 category and term

Category	Term	Number of Events (Patients Affected)		
		Group A	Group P	Total
Blood and lymphatic system disorders	Alt increase	4 (1)	0 (0)	4 (1)
	Anemia	28 (4)	14 (3)	42 (7)
	Cytopenia	1 (1)	0 (0)	1 (1)
	Deranged clotting	0 (0)	2 (1)	2 (1)
	Febrile neutropenia	5 (2)	12 (2)	17 (4)
	Ggt	4 (1)	0 (0)	4 (1)
	Thrombotic thrombocytopenic purpura	0 (0)	1 (1)	1 (1)
Cardiac disorders	Heart failure	1 (1)	0 (0)	1 (1)
	Pericardial effusion	0 (0)	1 (1)	1 (1)
	Sinus bradycardia	0 (0)	1 (1)	1 (1)
	Sinus tachycardia	0 (0)	1 (1)	1 (1)
Endocrine disorders	Cushingoid	11 (1)	0 (0)	11 (1)
Eye disorders	Conjunctivitis	4 (1)	0 (0)	4 (1)
	Papilledema	0 (0)	1 (1)	1 (1)
Gastrointestinal disorders	Abdominal pain	2 (2)	3 (2)	5 (4)
	Anal pain	6 (1)	0 (0)	6 (1)
	Bloating	1 (1)	0 (0)	1 (1)
	Constipation	12 (1)	1 (1)	13 (2)
	Diarrhea	5 (2)	3 (2)	8 (4)
	Dyspepsia	0 (0)	3 (2)	3 (2)
	Esophagitis	0 (0)	1 (1)	1 (1)
	Hard stool	1 (1)	0 (0)	1 (1)
	Increased appetite	0 (0)	1 (1)	1 (1)
	Malabsorption	0 (0)	10 (1)	10 (1)
	Mucositis oral	0 (0)	9 (1)	9 (1)
	Nausea	1 (1)	2 (1)	3 (2)
	Stomach pain	0 (0)	1 (1)	1 (1)
	Vomiting	3 (3)	2 (1)	5 (4)
General disorders and administration site conditions	Edema face	1 (1)	0 (0)	1 (1)
	Edema limbs	7 (3)	0 (0)	7 (3)
	Fatigue	15 (4)	0 (0)	15 (4)
	Fever	10 (3)	6 (2)	16 (5)
	Irritability	0 (0)	1 (1)	1 (1)
	Pain	0 (0)	10 (2)	10 (2)
Hepatobiliary disorders	Jaundice	0 (0)	1 (1)	1 (1)
	Liver dysfunction	0 (0)	2 (1)	2 (1)
Infections and infestations	Bacteremia	0 (0)	1 (1)	1 (1)
	Buttock abscess	6 (1)	0 (0)	6 (1)

	Catheter related infection	0 (0)	1 (1)	1 (1)
	Lung infection	1 (1)	1 (1)	2 (2)
	Mouth ulcer	0 (0)	1 (1)	1 (1)
	Mouth ulcers - possible viral	1 (1)	0 (0)	1 (1)
	Mucosal infection	0 (0)	1 (1)	1 (1)
	Oral infection: candidiasis	0 (0)	1 (1)	1 (1)
	Oropharyngeal candidiasis	1 (1)	0 (0)	1 (1)
	Papulopustular rash	1 (1)	0 (0)	1 (1)
	Paronychia	6 (1)	0 (0)	6 (1)
	Sepsis	1 (1)	3 (2)	4 (3)
	Sepsis due to relapsed all	1 (1)	0 (0)	1 (1)
	Upper respiratory infection	0 (0)	1 (1)	1 (1)
	Urinary tract infection	7 (1)	0 (0)	7 (1)
Injury, poisoning and procedural complications	Bruising	0 (0)	5 (2)	5 (2)
Investigations	Alanine aminotransferase increased	8 (2)	16 (1)	24 (3)
	Aspartate aminotransferase increased	1 (1)	11 (1)	12 (2)
	Blood bilirubin increased	1 (1)	8 (2)	9 (3)
	Electrolyte disturbance	0 (0)	1 (1)	1 (1)
	GGT increased	6 (1)	0 (0)	6 (1)
	Ldh increased	2 (1)	0 (0)	2 (1)
	Lymphocyte count decreased	0 (0)	13 (1)	13 (1)
	Neutrophil count decreased	4 (1)	10 (1)	14 (2)
	Platelet count decreased	18 (3)	11 (2)	29 (5)
	Weight gain	1 (1)	0 (0)	1 (1)
	White blood cell decreased	5 (1)	10 (1)	15 (2)
	White cell count increased	2 (1)	0 (0)	2 (1)
Metabolism and nutrition disorders	Hyperglycemia	19 (1)	0 (0)	19 (1)
	Hypoalbuminemia	0 (0)	6 (1)	6 (1)
	Hypokalemia	0 (0)	7 (1)	7 (1)
	Hypomagnesemia	0 (0)	7 (1)	7 (1)
	Hyponatremia	14 (2)	2 (1)	16 (3)
	Hypophosphatemia	0 (0)	10 (1)	10 (1)
	Reduced oral intake	0 (0)	1 (1)	1 (1)
Musculoskeletal and connective tissue disorders	Back pain	1 (1)	0 (0)	1 (1)
	Bone pain	0 (0)	2 (1)	2 (1)
	Generalized muscle weakness	1 (1)	0 (0)	1 (1)
	Mild cramps in hand	3 (1)	0 (0)	3 (1)
	Muscle weakness lower limb	11 (1)	0 (0)	11 (1)
	Myalgia	0 (0)	1 (1)	1 (1)
	Proximal myopathy	5 (1)	0 (0)	5 (1)
	Shoulder pain	3 (1)	0 (0)	3 (1)
	Headache	3 (1)	1 (1)	4 (2)

Nervous system disorders	Hydrocephalus	0 (0)	1 (1)	1 (1)
	Lethargy	0 (0)	1 (1)	1 (1)
	Peripheral motor neuropathy	1 (1)	0 (0)	1 (1)
	Peripheral sensory neuropathy	15 (1)	0 (0)	15 (1)
	Proximal myopathy	1 (1)	0 (0)	1 (1)
	Syncope	1 (1)	0 (0)	1 (1)
	Tremor	1 (1)	0 (0)	1 (1)
Psychiatric disorders	Anxiety	0 (0)	1 (1)	1 (1)
	Euphoria	1 (1)	0 (0)	1 (1)
	Insomnia	1 (1)	0 (0)	1 (1)
	Low mood	1 (1)	0 (0)	1 (1)
Renal and urinary disorders	Jaundice	0 (0)	1 (1)	1 (1)
	Proteinuria	0 (0)	2 (1)	2 (1)
	Renal dysfunction	0 (0)	2 (1)	2 (1)
	Urinary tract pain	3 (1)	0 (0)	3 (1)
Respiratory, thoracic and mediastinal disorders	Cough	5 (1)	0 (0)	5 (1)
	Dyspnea	4 (3)	0 (0)	4 (3)
	Epistaxis	0 (0)	2 (2)	2 (2)
	Oesophagitis	0 (0)	1 (1)	1 (1)
	Right sided pneumonia	2 (1)	0 (0)	2 (1)
Skin and subcutaneous tissue disorders	Acne	4 (1)	0 (0)	4 (1)
	Alopecia	6 (2)	0 (0)	6 (2)
	Buccal mucosa erythema	0 (0)	1 (1)	1 (1)
	Dry ski	0 (0)	1 (1)	1 (1)
	Face and neck red	1 (1)	0 (0)	1 (1)
	Folliculitis	4 (1)	0 (0)	4 (1)
	Petechial rash	1 (1)	0 (0)	1 (1)
	Pressure sore	0 (0)	1 (1)	1 (1)
	Pruritus	1 (1)	1 (1)	2 (2)
Vascular disorders	Rash maculo-papular	10 (3)	1 (1)	11 (4)
	Hypertension	2 (1)	0 (0)	2 (1)
	Hypotension	0 (0)	3 (1)	3 (1)
	Vascular access complication	1 (1)	0 (0)	1 (1)

Table 13: Serious Adverse Events category, outcome and expectedness information by treatment group

		Number of Events (%)		
		Group A	Group P	Total
Serious Adverse Event Category				
	Unrelated SAE	3 (30)	2 (33)	5 (31)
	SAR	2 (20)	2 (33)	4 (25)
	Non-fatal/life-threatening SUSAR	4 (40)	0	4 (25)
	Fatal/life-threatening SUSAR	1 (10)	2 (33)	3 (19)
	Total	10	6	16
Outcome				
	Unresolved	2 (29)	0	2 (17)
	Resolved – no sequelae	4 (57)	3 (60)	7 (58)
	Resolved – with sequelae	1 (14)	2 (40)	3 (25)
	Unknown	3	1	4
	Total	10	6	16