Alcor A-1118
Case Report

Prepared by:

**Linda Chamberlain, Co-Founder and
Director of Special Projects,
Alcor Life Extension Foundation**

December – 2022

Table of Contents

1. Summary 3
2. Patient Assessment and Pre-Deployment 3
3. Deployment 5
4. Stabilization 5
5. Field Surgery and Field Cryoprotection (FCP) 6
6. Transport 8
7. Cooling to Liquid Nitrogen Temperature 8
8. Timeline and Time Summaries 9
9. Table of Medications Administered 11
10. Table of Concentrations (Brix) of nM22 Solution 12
11. Discussion 13
12. Graphs and CT Scans 14
13. S-MIX Data 18

1. Summary

Information was derived from multiple sources and was all converted to Mountain Standard Time (MST). For de-identification, dates are not shown. T-0 represents the date of cardiac arrest (if more than a few moments before pronouncement) or pronouncement of legal death, T-X represents occurrences on dates before T-0, and T+X represents occurrences on dates following T-0.

A-1118 was an 81-year-old member with neuro cryopreservation arrangements who had suffered with dementia for years and a history of seizures with preventative medication. The cause of death on the death certificate was dementia and failure to thrive. The member went into cardiac arrest at 17:48 and was pronounced legally deceased in Indiana at 17:50 hrs on T-0 days in May of 2022.

After stabilization and field cryoprotection (FCP), the patient was air transported to Alcor for cryogenic cooldown. The patient arrived at Alcor at 16:56 hrs on T+1 days. The cryogenic cooldown was initiated on T+1 days at 17:09 hrs and terminated on T+5 days at 16:50 hrs. CT scans were made of the patient's brain on T+58 days at 11:00 hrs. The patient was transferred to long-term maintenance at liquid nitrogen temperature on T+96 days at 13:11 hrs.

2. Patient Assessment and Pre-Deployment

T-345 days

The member had been on Alcor's Watch List for several months with chronic illness and dementia. Alcor's Medical Response Director (MRD) was alerted that a week earlier the member went to the Emergency Department (ED) with pneumonia and fluid around the heart. The member was discharged the next day but collapsed in the backyard. Emergency Medical Services (EMS) took the member back to the ED and completed a workup that determined it was likely a seizure that caused the collapse/fall.

T-341 days

The member was taken back to the hospital with a grand mal seizure with low oxygen levels. The member had a history of seizures with preventative medication but had never previously had a grand mal seizure.

T-337 days

The member was discharged from the hospital and was back at home.

T-335 days

The member was back in the hospital with severe weakness. The plan was to move the member to a rehabilitation facility upon discharge. Alcor's MRD remained in frequent contact with the member's family. There were no significant changes until November.

T-167 days

The member was having daily seizures and the family was exploring hospice options.

T-154 days

The member went back to the hospital from the rehabilitation facility with a fever of 38°C, semi-coherent and a suspected urinary tract infection.

T-137 days

The member was back in the rehabilitation facility and had mild COVID-19 symptoms that were not severe enough to require hospitalization.

T-122 days

The member was much weaker, sleepier, and participated less in physical therapy.

T-119 days

The member had apparently had a stroke at the rehabilitation facility, presenting with a crooked smile, sticking the tongue out sideways, and extreme weakness. The member was taken to the hospital. The MRD called Alcor's Medical Advisor to discuss the possibility of deployment of a team. During this discussion, the family called to report that the symptoms had resolved. This meant that the event was more likely a transient ischemic attack (TIA) than a stroke. The decision was made to not deploy a team at that time. The member was discharged back to the rehabilitation facility.

T-114 days

The member was still not experiencing stroke symptoms and was eating approximately one meal per day as well as sleeping throughout most of the day and night.

T-112 days

The member had been doing better, awake for most of the last two days, and participating in rehabilitation therapy, using a wheelchair, and is joking with the staff and his family.

T-93 days

The member was still in the rehabilitation facility and was being followed by hospice nurses. The member was medically stable and more talkative and alert than in recent months. The MRD stayed in frequent contact with the member's family. There were no significant changes.

3. Deployment

T-1 days

The rehabilitation facility staff and the hospice care providers alerted Alcor that imminent legal death was likely. At 12:10 hrs the MRD declared this a Level-1 emergency and officially deployed International Cryomedicine Experts (ICE) to stabilize the patient after pronouncement of legal death and to perform the field cryoprotection (FCP) procedure. The member had an estimated height of 5'8.5" and weighed approximately 115 lbs.

Sidebar:
The medical personnel on the Alcor Deployment Committee have determined a list of medical indicators that have either a Level-1, or a high probability of death within seven days, or a Level-2, a medium probability of death within seven days. The Deployment Committee voting members use these criteria when considering if a deployment is necessary.

The member was taken to the hospital for agonal breathing and only being responsive to painful stimuli. After a long discussion with medical providers and the MRD, the member's family changed the status from full code to Do Not Resuscitate (DNR). After stabilization, the member was transferred back to the rehabilitation facility for comfort care measures.

T-0 days

The ICE team and Alcor's Case Logistics Manager, who had also been deployed, were all at the member's bedside at 00:08 hrs. At 05:51 hrs the member's capillary oxygen saturation (SpO_2) was 100% on 5 liters of oxygen provided by nasal cannula and atrial fibrillation (irregular, racing heartbeat) rate between 80 and 100. At 06:52 hrs the hospice nurse evaluated the member and began to wean the member off the oxygen at a rate of 1 liter/min every 30 minutes until no oxygen was given. The member was given increasing morphine to address expected air hunger.

At 17:43 hrs, with one team member attending the member, a dramatic change was noted in the member's breathing. A nurse was asked to evaluate the member. Breath sounds were absent but apical, or peak heart tones were present. The member went into cardiac arrest at approximately 17:48 hrs and was pronounced legally deceased at 17:50 hrs. This was communicated to the team at 17:54 hrs.

4. Stabilization

Ice bags were placed around the patient's head at 17:55 hrs. The patient was rolled onto the Mega-Mover at 17:56 hrs and the first intraosseous device for injecting the stabilization medications was placed in the tibial plateau of the left leg at 17:57 hrs. The first stabilization medication was injected at 17:59 hrs (see the below Table of Medications Administered for the names of the medications, the dosages and times of administration).

The ROSC-U mechanical chest compression device was initiated at 18:00 hrs to circulate the medications and to improve cooling. A King airway was placed at 18:03 hrs, the SAVe ventilator

was started at 18:04 hrs, and these were secured in place with a Thomas tube holder. A Res-Q-Pod impedance device was placed on the end of the esophageal airway to enhance venous return and cardiac output during cardiac compression by increasing the degree of negative intrathoracic pressure. A Colorimetric End Tidal CO2 (EtCO2) detector was placed on top of the Res-Q-Pod to provide an indication of the effectiveness of cardiac compression (see the Discussion section for further information).

A nasogastric tube was inserted into the King airway at 18:15 hrs for the administration of antacid to protect the stomach. A second intraosseous device was placed in the tibial plateau of the right leg to allow additional team members to speed up the process of administering medications from an additional site. The last medication was administered at 18:27 hrs and a representative from the funeral home arrived at 19:38 hrs to transport the patient.

At 19:40 hrs the patient was placed in a portable ice bath (PIB) made from a body bag. The patient was then moved to the funeral home transport cot. 100 lbs. of ice and 5 gallons of water were added to the PIB, and a Surface Conduction Cooling Device (SCCD) was placed in the PIB to circulate the ice water and improve cooling. The patient had not been placed in the PIB prior to this as it would have been too heavy to move and to lift if water had been added earlier.

5. **Field Surgery and Field Cryoprotection (FCP)**

The funeral director arrived to transport the patient at 19:38 hrs. The team left for the funeral home at 19:46 hrs where surgery and field cryoprotection procedure would be performed and arrived at the funeral home at 20:19 hrs. Cardiac compression continued while the surgical trays and the perfusion system were set up. Cardiac compression was terminated at 20:45 hrs, the temperature was not audible on the video. The patient was prepped for surgery and the field surgical procedure was initiated at 20:52 hrs. The right carotid artery was isolated and raised at 20:59 hrs.

The left carotid artery was isolated and raised at 21:05 hrs. The patient’s scalp was prepped for establishing the burr holes at 21:08 hrs. Using a Codman perforator and drill, the right burr hole was completed at 21:11 hrs and the left burr hole was completed at 21:15 hrs. The burr holes were cleaned up and the cephalic isolation was initiated at 21:22 hrs. A thermocouple probe was placed in one of the burr holes and secured to the scalp with a loop and surgical staples at 21:28 hrs. It was connected to a data logger at 21:30 hrs. The first temperature reading was not available for this report because it was inaudible on the video used to write the field notes.

The cephalon was moved to the neuro perfusion container at 21:31 hrs. The left carotid artery was cannulated with an 18-gauge catheter at 21:34 hrs. Open circuit cryoprotectant perfusion was initiated at 21:35 hrs on the left carotid artery using bladder #2 (see the below Table of Concentrations (Brix) of nM22 Solution for the times the bladders were hung, the precalculated concentrations of the bladders, and refractive index readings).

By hanging two bladders with different cryoprotectant concentrations on a teeter-totter atop an elevated tripod, a smoother transition of increasing concentrations of cryoprotectant can be achieved (see the Discussion section for a more detailed explanation of the field equipment). The first bladder was hung and opened to flow, and the second bladder was opened when the first bladder was about half empty. The third bladder was hung when the first bladder was empty and opened when the second was about half empty, and so on.

The right carotid artery was cannulated with an 18-gauge (ga) catheter at 21:37 hrs. Open circuit cryoprotectant perfusion was initiated on the right carotid artery at 21:38 hrs All refractive index (RI) readings were taken from the effluent from the left jugular vein. The cannulae were secured bilaterally at 21:40 hrs.

The height of the bladders on the teeter totter was 36 inches to 38 inches which is (36" x 2.054 mmHg per inch of height =) 74 to 78 maximum arterial pressure at the infusion site. The goal is to have the pressure between 70 and 80 mmHg and the bladders can be raised or lowered as needed to optimize flow and protect the vasculature. Ethylene glycol antifreeze was added to the water in the heat exchanger at 23:12 hrs to produce temperatures below 0°C.

See the below Table of Concentrations (Brix) of nM22 Solution, for the times the bladders were started, the precalculated concentrations of each bladder, and the refractive index of effluent samples taken, see the note below the table for an explanation of why Bladder #1 was not used.

Sidebar:
Per the cryoprotection protocol, the ramp is to be paused at 30 Brix (50% of the desired terminal concentration) to allow the patient to come to osmotic equilibrium. When the bladder system is used, bladders 6 & 7 represent the pause. The cephalic enclosure and the chiller are switched from +3°C to -3°C operation. At the end of the 30-minute pause, the ramp is resumed at the maximum addition rate (maximum without losing total volume in the circuit) to go to 105% of the desired end concentration (52.5 Brix) and held between 102% and 105% concentration until the terminal concentration is obtained.

T+1 days

The cryoprotection concentration was 51.3 Brix at 23:40 hrs. The one-hour countdown to termination of cryoprotectant perfusion was started. Field cryoprotection was terminated at 00:37 hrs. The terminal cryoprotectant concentration as measured at the left jugular vein was 51.2 Brix. An eyebolt was placed in the vertebra for handling and the patient was moved into the dry ice shipper at 00:50 hrs and the shipper was filled with approximately 5 lbs. of dry ice to initiate dry ice cooling.

6. Transport

The patient was taken to the airport for transport to Alcor and checked into the cargo department. The patient arrived at Alcor at 16:56 hrs with no airline delays or problems. The patient's NPT was -52°C.

7. Cooling to Liquid Nitrogen Temperature

A computer program was used to initiate cryogenic cooldown at 17:09 hrs on T+1 days, plunging to -110°C and descending thereafter at -1°C/hour to liquid nitrogen temperature (-196°C). The burr hole thermocouple was damaged while transferring the patient into the cooldown enclosure resulting in signal loss (see the Discussion section).

A cooldown error occurred just after midnight on T+2 days resulting in the temporary shutdown of the system; it was rebooted immediately (see the Discussion section). On T+5 days at 16:50 hrs cryogenic cooldown was terminated. On T+58 days at 11:00 hrs, CT scans were made of the patient's brain while in liquid nitrogen. On T+96 days at 13:11 hrs, the patient was transferred to long-term maintenance at liquid nitrogen temperature.

8. Timeline and Time Summaries

Timeline

T-0 days	17:48	Time of cardiac arrest (estimate)
T-0 days	17:50	Pronouncement of legal death
T-0 days	17:55	Ice packed around patient's head
T-0 days	17:57	Placement of first intraosseous device (IO)
T-0 days	17:59	Admin of first medication (200 mg propofol)
T-0 days	18:00	Start mechanical chest compression
T-0 days	18:03	Placement of airway
T-0 days	18:21	Placement of second intraosseous device (IO)
T-0 days	18:24	Nasopharyngeal probe placed
T-0 days	18:27	Admin of final medication (200 ml decaglycerol/THAM)
T-0 days	19:40	Start ice bath cooling
T-0 days	19:46	Start transport of patient to funeral home for surgery/FCP
T-0 days	20:19	Arrived at funeral home
T-0 days	20:45	Stop cardiopulmonary support (inaudible on video)
T-0 days	20:52	Start of field surgery
T-0 days	21:22	Start cephalic isolation
T-0 days	21:30	End field surgery
T-0 days	21:35	Start of open circuit cryoprotection (FCP)
T-0 days	23:40	Start 1-hour countdown to end FCP
T+1 days	00:37	End FCP cryoprotection (final Brix concentration = 51.2)
T+1 days	00:50	Start of dry ice cooling
T+1 days	16:56	Arrival of patient at Alcor OR (NPT -52°C)
T+1 days	17:09	Start of cryogenic cooldown
T+5 days	16:50	End of cryogenic cooldown
T+58 days	11:00	CT scans at LN2 temperature
T+96 days	13:11	Transfer of patient to long-term maintenance

Time Summaries

Event Duration hr:min		days	time	
STABILIZATION				
00:02	From:	T-0	17:48	Time of cardiac arrest (estimate)
	Till:	T-0	17:50	Pronouncement of legal death
00:07	From:	T-0	17:48	Time of cardiac arrest (estimate)
	Till:	T-0	17:55	Ice packed around patient's head
01:52	From:	T-0	17:48	Time of cardiac arrest (estimate)
	Till:	T-0	19:40	Start ice bath cooling
00:11	From:	T-0	17:48	Time of cardiac arrest (estimate)
	Till:	T-0	17:59	Admin of first medication (200 mg propofol)
00:12	From:	T-0	17:48	Time of cardiac arrest (estimate)
	Till:	T-0	18:00	Start mechanical chest compression
00:28	From:	T-0	17:59	Admin of first medication (200 mg propofol)
	Till:	T-0	18:27	Admin of final medication (200 ml decaglycerol/THAM)
FIELD SURGERY AND CRYOPROTECTANT PERFUSION (FCP)				
03:04	From:	T-0	17:48	Time of cardiac arrest (estimate)
	Till:	T-0	20:52	Start of field surgery
00:38	From:	T-0	20:52	Start of field surgery
	Till:	T-0	21:30	End field surgery
03:47	From:	T-0	17:48	Time of cardiac arrest (estimate)
	Till:	T-0	21:35	Start of open circuit cryoprotection (FCP)
03:02	From:	T-0	21:35	Start of open circuit cryoprotection (FCP)
	Till:	T+1	00:37	End FCP cryoprotection (final Brix concentration = 51.2)
06:49	From:	T-0	17:48	Time of cardiac arrest (estimate)
	Till:	T+1	00:37	End FCP cryoprotection (final Brix concentration = 51.2)
00:43	From:	T-0	20:52	Start of field surgery
	Till:	T-0	21:35	Start of open circuit cryoprotection (FCP)
03:45	From:	T-0	20:52	Start of field surgery
	Till:	T+1	00:37	End FCP cryoprotection (final Brix concentration = 51.2)
CRYOGENIC COOLDOWN AT ALCOR				
23:08	From:	T-0	17:48	Time of cardiac arrest (estimate)
	Till:	T+1	16:56	Arrival of patient at Alcor OR (NPT)
16:32	From:	T+1	00:37	End FCP cryoprotection (final Brix concentration = 51.2)
	Till:	T+1	17:09	Start of cryogenic cooldown
23:21	From:	T-0	17:48	Time of cardiac arrest (estimate)
	Till:	T+1	17:09	Start of cryogenic cooldown
00:13	From:	T+1	16:56	Arrival of patient at Alcor OR (NPT 52°C)
	Till:	T+1	17:09	Start of cryogenic cooldown

9. Table of Medications Administered

T-0 days

TIME	MEDICATION	DOSE	PURPOSE
17:59 hrs	Propofol	200 mg	Anesthetic; reduces cerebral metabolic demand; reduces the theoretic possibility of increased awareness during aggressive CPS.
18:01 hrs	Sodium citrate	100 mL	Anticoagulant; prevents blood clot formation.
18:08 hrs	Heparin	50,000 IU	Anticoagulant; prevents blood clot formation.
18:08 hrs	Vasopressin	40 IU Note 1	Vasopressor; increases blood pressure during CPS.
18:12 hrs	Minocycline	200 mg	Antibiotic and neuroprotectant
18:17 hrs	SMT (S-methyl-isothiourea)	400 mg Note 2	Neuroprotectant (iNOS inhibitor); protects the brain from ischemic injury; raises blood pressure.
18:18 hrs	Antacid	240 cc	A buffer used to protect the stomach from acid erosion.
18:19 hrs	Decaglycerol/THAM	200 ml Note 3	Decaglycerol inhibits cerebral edema.
18:24 hrs	Vital Oxy (w/ saline)	150 cc Note 4	Antioxidants: melatonin, vitamin E (D-alpha tocopherol), PBN (alpha Phenyl t-Butyl Nitrone) and anti-inflammatory carprofen.
18:26 hrs	Vasopressin	40 IU Note 1	Vasopressor; increases blood pressure during CPS.
18:27 hrs	Decaglycerol/THAM	200 ml Note 3	Decaglycerol inhibits cerebral edema.

Notes:

1. Vasopressin is a fixed dosage of 40 IU, per dose for two doses. The second 40 IU dose is to be administered concurrently with Vital-Oxy, I.V. Vasopressin is to be administered only if the patient's temperature is above 20°C as it is ineffective at cold temperatures.

2. SMT (S-methyl isothiourea) is a powder, (1 vial = 400 mg) dissolved in 10 mL of saline and injected through a 0.2 µ filter. SMT is unstable in solution with a use life of approximately six hours.

3. Decaglycerol/THAM is administered as a custom formulation of 20% w/v decaglycerol and 4.5% w/v THAM (tromethamine) in water.

4. The medications protocol dilutes 70 mL or less, based on body weight, of Vital-Oxy into 150 mL of saline for a total of 220 cc of diluted Vital-Oxy saline. Each mL of Vital-Oxy contains 194 mg Sigma Cremophor EL (or Sigma Kolliphor EL), 155 mg ethanol, 19.4 mg PBN, 3.24 mg carprofen, 1.55 mg melatonin, and 198 IU vitamin E.

5. Streptokinase, which is a thrombolytic used to break up existing blood clots is normally added to the first washout bladder, but it was not added for this case due to a miscommunication about the labelling of this medication in the kit. The contractor is now familiar with the labelling and this issue should not happen in the future.

10. Table of Concentrations (Brix) of nM22 Solution

A-1118 step-ramp, nM22							
Endpoint is over 49.9 Brix from both jugulars for 1/2 hr							
2-liter bag labeled	[nM22], CNV	Brix (calc)	bag started, hr:min MST	bag started, hr:min post-pro-nouncement	bag flow rate, ml/min	Brix, effluent	Comments
2	0.05	11.81	21:35	3:45			Start
3	0.08	13.14	21:58	4:08	87		
4	0.14	15.35	22:12	4:22	143		
5	0.23	19.03	22:25	4:35	154		
6	0.50	29.85	22:39	4:49	143		
7	0.50	29.85	22:55	5:05	125		
8	1.06	52.31	23:13	5:23	111		
9	1.06	52.31	23:27	5:37	143		
10	1.06	52.31	23:40	5:50	154	51.0	
11	1.06	52.31	23:54	6:04	143		
12	1.06	52.31	0:07	6:11	286	51.3	
13	1.06	52.31	0:28	6:32	95		
			0:37	6:41	222	51.2	End

Note: When the bladders with precalculated concentrations of cryoprotectant are made up in the lab, the first bladder in the series contains only the B1 carrier solution with no cryoprotectant and was intended to be used for purging air bubbles. Bladder #2 contains the lowest concentration of cryoprotectant. Limited experience with the bladder system, however, has shown that better edema control is provided when the initial perfusion is done with cryoprotectant. As a result, cryoprotectant perfusion is initiated with Bladder #2. When there is sufficient experience to make this the standard protocol, the lab procedure for creating the Bladders will be changed so that Bladder #1 will contain cryoprotectant.

11. Discussion

Stabilization and Transport

The End Tidal CO2 (EtCO2) information for this case cannot be compared with cases where a device such as the CMI PC-900B capnograph device is used. For this case, a Colorimetric End Tidal CO2 detector was placed on top of the Res-Q-Pod to provide team members with an indication of the effectiveness of cardiac compression while they were working, but that device does not record data.

The Alcor portable ice bath had not been taken on this case, only the body bag. The patient was kept on the hospital bed, cooling with bagged ice, with the ROSC and SAVe providing circulation and ventilation. Once the funeral home arrived, the patient was transferred to the funeral home's transport cot. Water was added and the surface conduction cooling device (SCCD), after the patient was on the cot, as it would have been too heavy to move and to lift, if added earlier. Alcor contractors have been reminded of the importance of using the PIB with its recirculating system and asked to always make a maximum effort to use these important devices.

Field Surgery and Cryoprotectant Perfusion

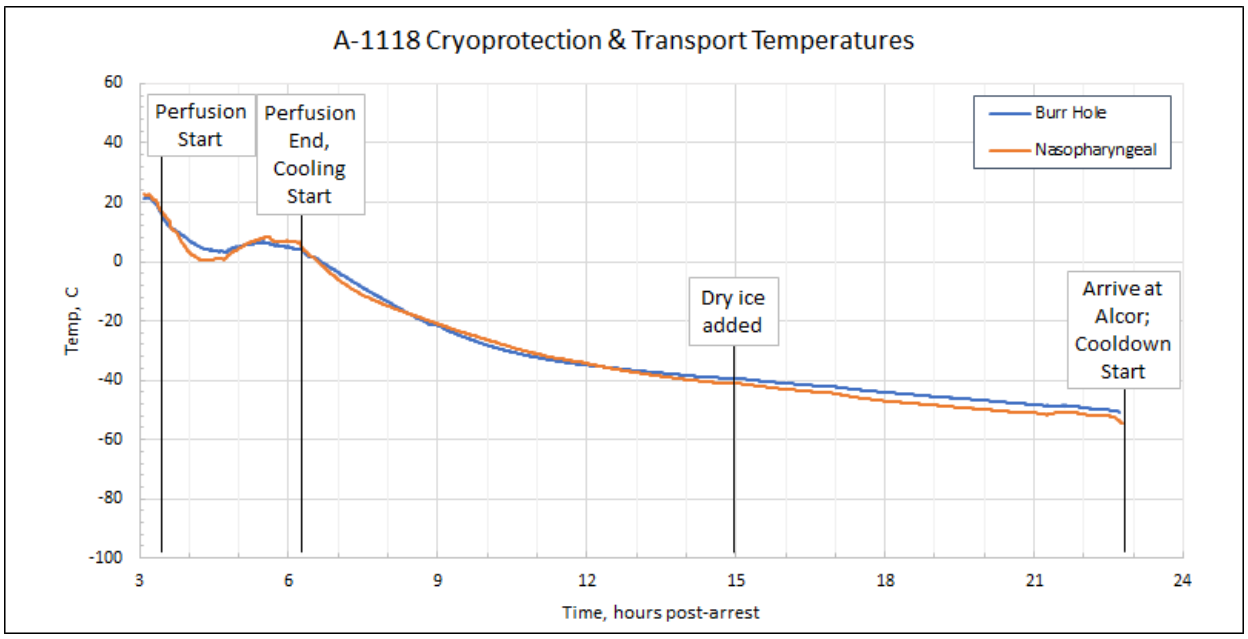
The gravity feed system for FCP uses a tripod that can be adjusted for height to control the arterial pressure. The pre-mixed cryoprotectant was in a series of bladders with graduated concentrations [measured by the refractive index (RI) in Brix units]. By hanging two bladders with different RI concentrations on a teeter-totter atop the tripod, as the bladder with the lower RI runs out and becomes lighter, at the mid-way point the teeter-totter will allow both bladders to flow, essentially mixing the two concentrations and creating a smoother transition from one concentration to the next. When the bladder with the lower RI runs out, the full concentration of the bladder with higher RI is then flowing exclusively. This process allows for a smoother curve in the increasing concentrations of cryoprotectant.

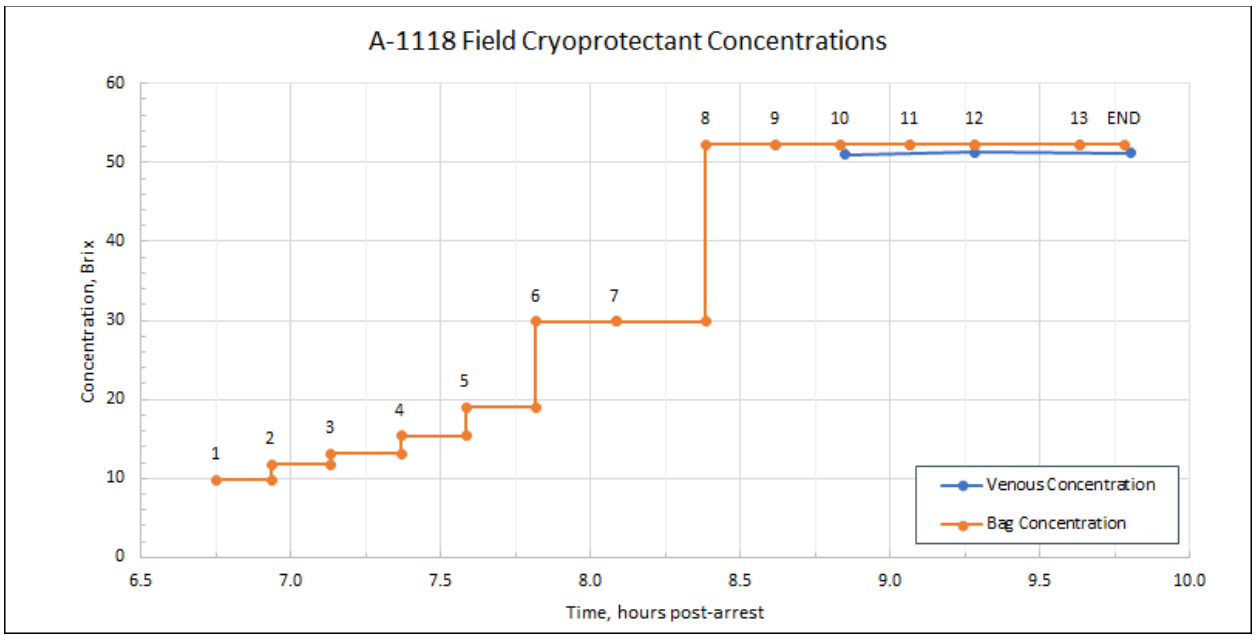
Cryogenic Cooldown

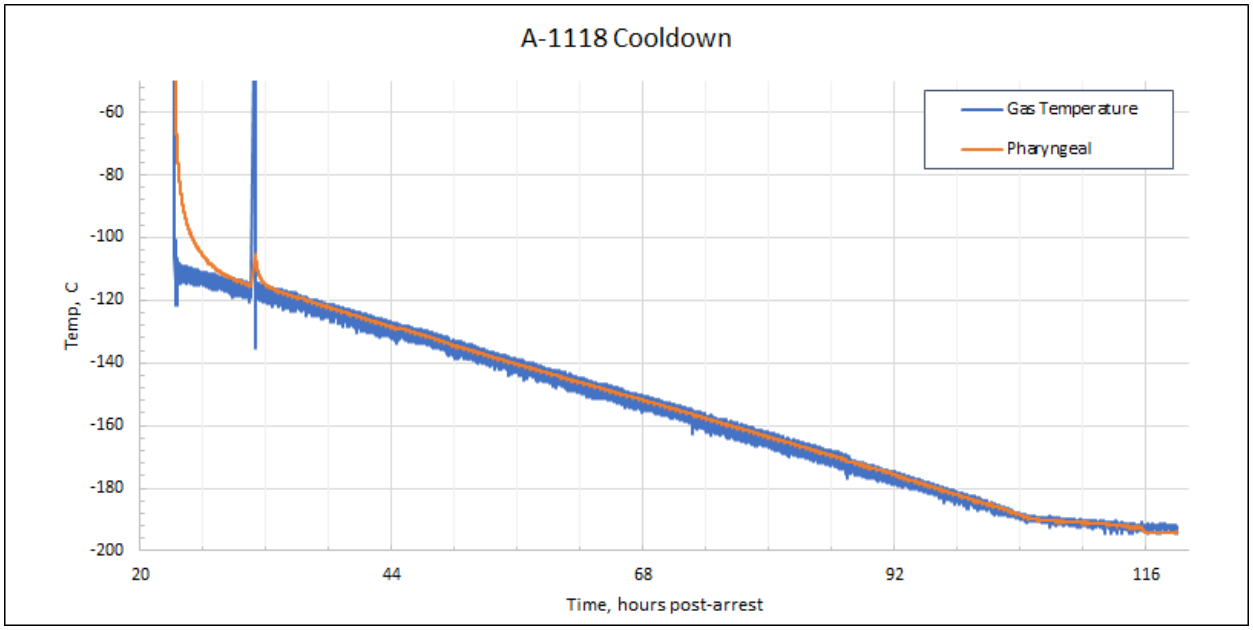
A thermocouple was damaged while transferring to patient into the cooldown enclosure. This resulted in losing temperature data from the burr hole during cooldown. Greater care will be taken when unpacking the patient to ensure the probe was not routed under the dry ice or tugged. Contractors have been instructed to pay attention to this as well. More recent cases have not had this experience as the contractors have been routing the thermocouples up through the patient wrapping bag.

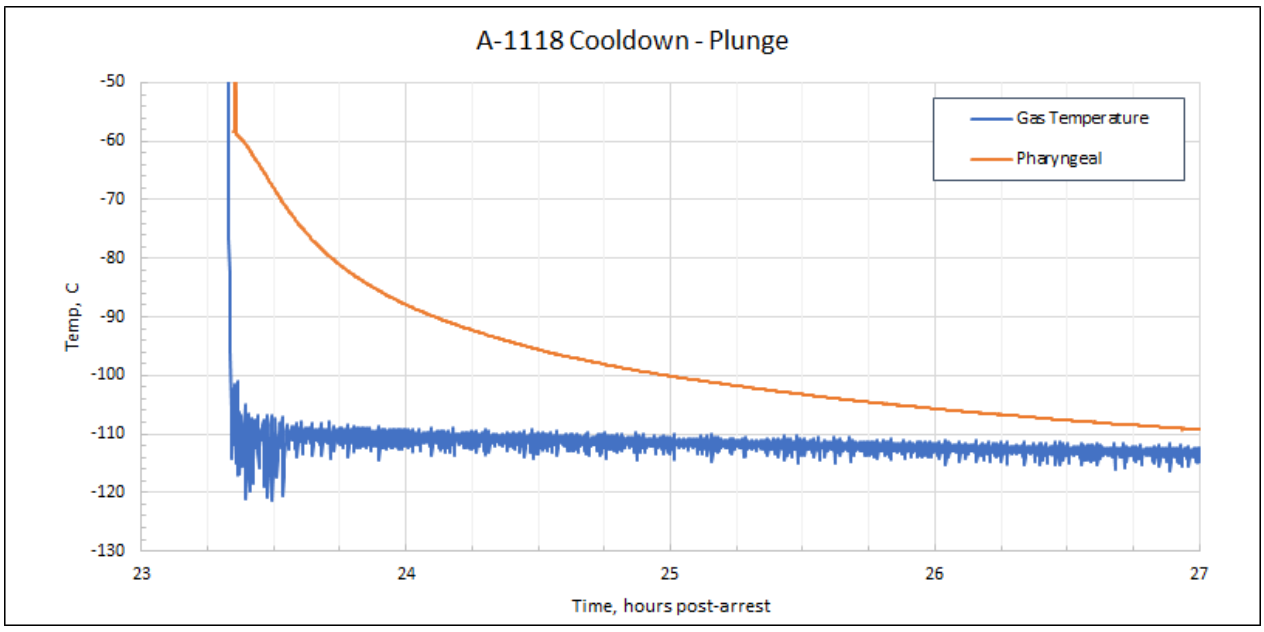
A cooldown error on T+2 days resulting in the temporary shutdown of the system. The system shut down was due to a software update. This was one of the first uses of this cooldown system and staff had forgotten to disconnect it from the internet. A staff member was present when it happened, so it was rebooted immediately. After disconnecting from the internet connection completely, this problem was solved.

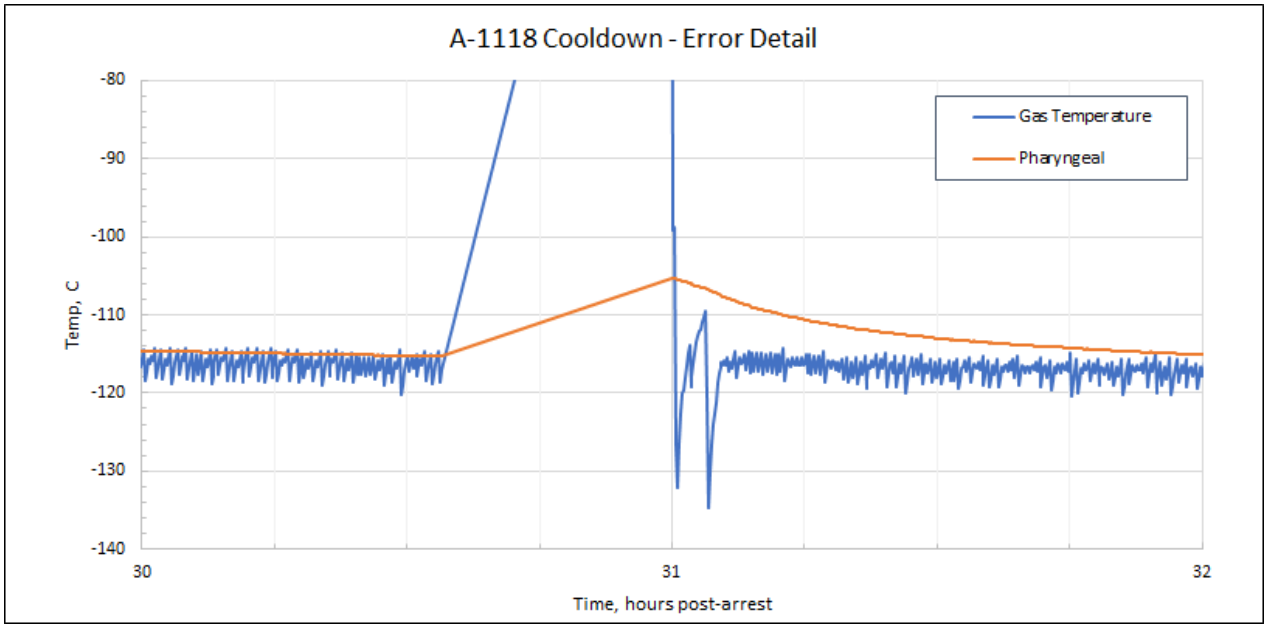
12. Graphs and CT Scans



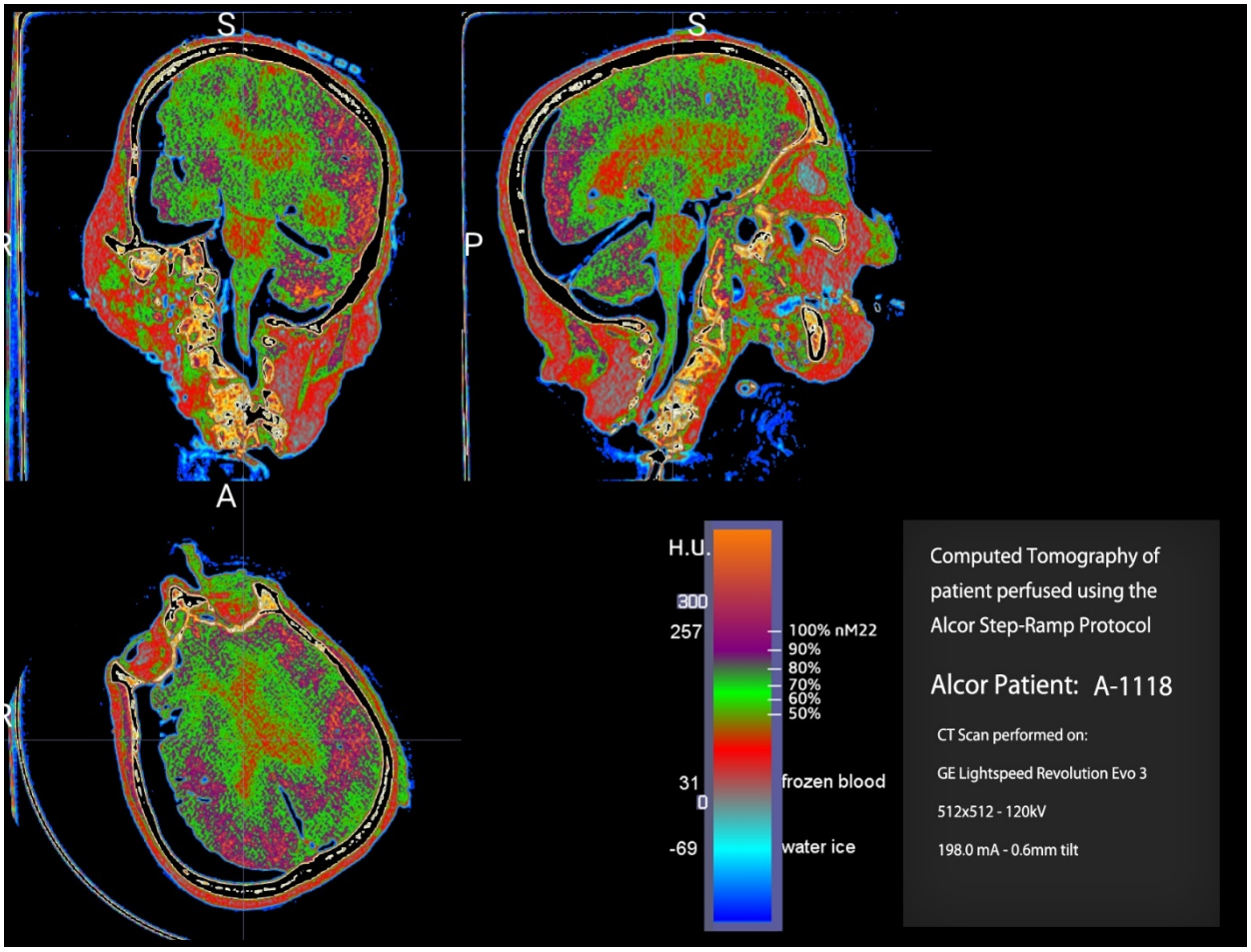



A-1118 Cooldown
Gas Temperature
Pharyngeal
Temp, C
-60
-80
-100
-120
-140
-160
-180
-200
20
44
68
92
116
Time, hours post-arrest


A-1118 Cooldown - Plunge
Gas Temperature
Pharyngeal
Temp, C
-50
-60
-70
-80
-90
-100
-110
-120
-130
23
24
25
26
27
Time, hours post-arrest


A-1118 Cooldown - Error Detail
-80
-90
-100
-110
-120
-130
-140
Temp, C
30
31
32
Time, hours post-arrest
Gas Temperature
Pharyngeal

Cryoprotectant Distribution (Post-cryopreservation CT scans)

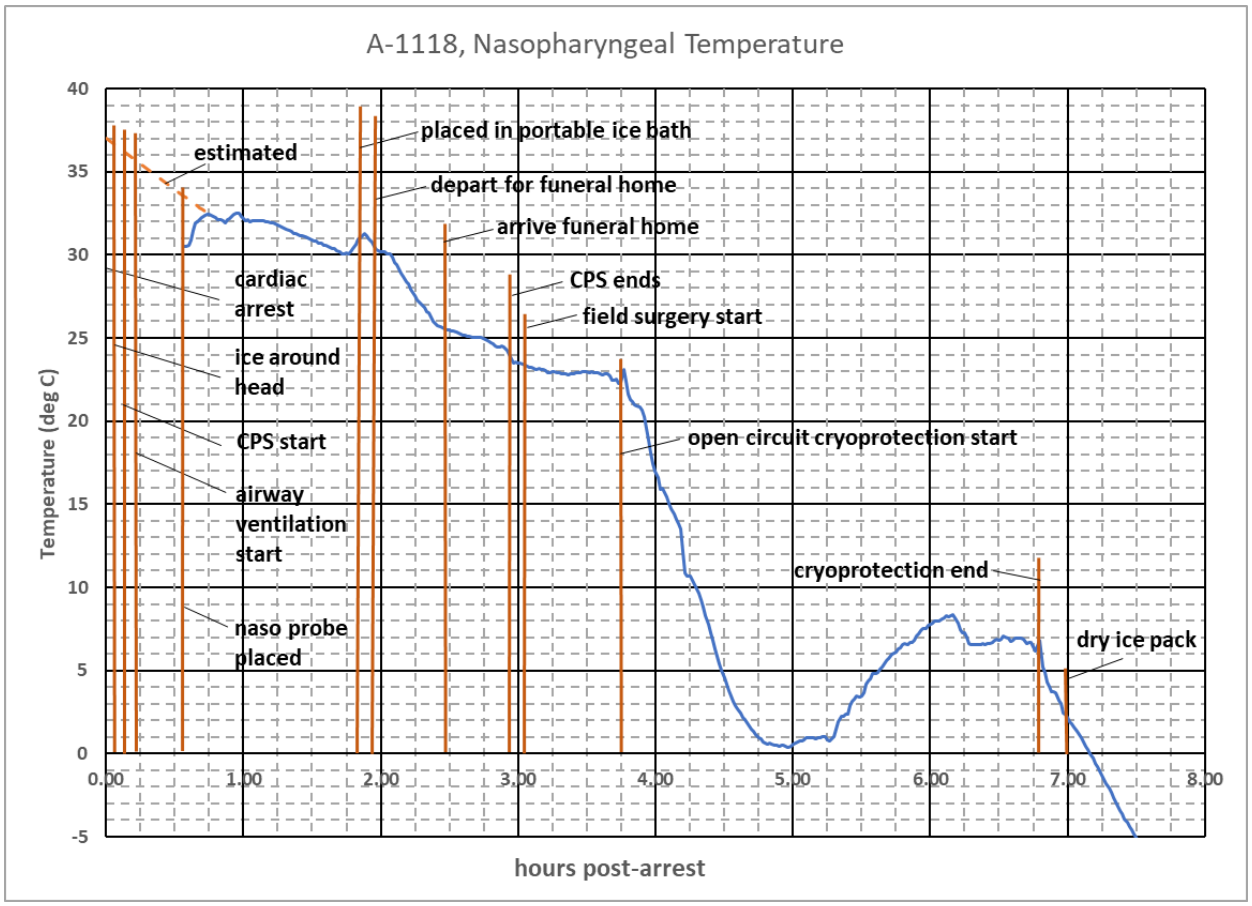


The post-cryogenic cooldown CT scan was obtained on T+58 days; the patient was at liquid nitrogen temperature (-196°C).

The scans show that most of the brain did not receive M22 concentrations above the concentrations necessary to vitrify with some areas consistent with frozen blood (i.e., poorly perfused). CPA-induced shrinking of the brain is minimal.

13. S-MIX Data

The Standardized Measure of Ischemic Exposure (S-MIX) expresses the total ischemic exposure prior to the start of cryogenic cooling as the equivalent duration of normothermic ischemia. An S-MIX of 00:00 (hh:mm) is the ideal case of no ischemic damage. The higher the S-MIX time, the more damage. Factors that improve the S-MIX, and that are quantitatively accounted for in the below table are: shorter times at higher temperatures, ventilation during cardiopulmonary support (CPS), and oxygenation during blood washout. As calculated below, S-MIX duration for this case is 01:48.



event	segment number	days (T+X)	time (MST) duration	post-arrest	Tnaso (deg C)	CPS with ventilation	washout oxygenation	S-MIX (hh:mm)
cardiac arrest		T-0	17:48	00:00	37.0			
	seg 1		00:07	00:07	-0.7	no	no	00:07
ice bags placed around the head		T-0	17:55	00:07	36.3			
	seg 2		00:05	00:05	-0.5	no	no	00:05
mechanical CPS started		T-0	18:00	00:12	35.8			
	seg 3		00:04	00:04	-0.4	no	no	00:04
airway ventilation started		T-0	18:04	00:16	35.4			
	seg 4		01:36	01:36	-4.2	yes	no	00:33
patient placed in portable ice bath		T-0	19:40	01:52	31.2			
	seg 5		00:06	00:06	-0.9	yes	no	00:02
patient departed for funeral home		T-0	19:46	01:58	30.3			
	seg 6		00:33	00:33	-4.9	yes	no	00:09
patient arrived at funeral home		T-0	20:19	02:31	25.4			
	seg 7		00:26	00:26	-1.7	yes	no	00:05
CPS ended		T-0	20:45	02:57	23.8			
	seg 8		00:07	00:07	-0.5	no	no	00:03
field surgery started		T-0	20:52	03:04	23.3			
	seg 9		00:43	00:43	-1.0	no	no	00:16
open-circuit cryoprotection started		T-0	21:35	03:47	22.3			
	seg 10		03:02	03:02	-17.1	no	no	00:24
cryoprotection ended		T+1	00:37	06:49	5.2			
	seg 11		00:13	00:13	-3.4	no	no	00:01
cephalon packed in dry ice for shipment		T+1	00:50	07:02	1.8			
	seg 12		00:08	00:08	-1.8	no	no	00:01
naso temperature at 0 deg C		T+1	00:58	07:10	0.0			
totals:			07:10	07:10	-37.0			01:48