International Stroke Trial Database

Summary

The International Stroke Trial (IST) dataset includes data on 19,435 patients and 112 variables. For each randomized patient, data were extracted on the variables assessed at randomization, at the early outcome point, and at 6-months. This dataset provides a source of primary data and is available for public use for the conduct of secondary analyses and in the planning of future trials particularly in older patients and in resource-poor settings given the age distribution of the dataset.

Key Facts

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Complexity	Medium
Temporal Coverage	1991 to 1996
Spatial Coverage	World
Source	Department of Biostatistics, Vanderbilt University; University of Edinburgh, Department of Clinical Neurosciences
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Keywords	Stroke, Clinical trials, RCTs, Randomized Controlled Trials, Acute Stroke, Ischaemic Stroke, Haemorrhagic Stroke, Pulmonary embolism, Coronary heart disease, Pneumonia

Other Titles and Uses

- Clinical Trial on Stroke

- RCT on Stroke

Description

The International Stroke Trial (IST) is one of the largest randomized trials ever conducted on individual patients in acute stroke. The IST dataset includes data on 19 435 patients with acute stroke, with 99% complete follow-up. Over 26.4% patients were aged over 80 years at study entry. Background stroke care was limited and none of the patients received thrombolytic therapy.

This clinical trial was conducted between 1991 and 1996 and a pilot phase between 1991 to and 1993. This study is a large, prospective, randomized controlled trial, with 100% complete baseline data and over 99% complete follow-up data. For each randomized patient, data were extracted on the variables assessed at randomization; the early outcome point was 14-days after randomization or prior discharge, and at 6-months and provided as an analyzable database. The aim of the trial was to establish whether early administration of aspirin, heparin, both or neither influenced the clinical course of an acute ischaemic stroke.

Schema

Field Name	Type	Description	Properties
Hospital_Number	Integer	Hospital number	Level: Nominal; Required
Delay_in_Hours_at_Randomization	Integer	Delay between stroke and randomization in hours	Level: Ratio
Conscious_State_at_Randomization	String	Conscious state at randomization where F - fully alert, D - drowsy, U - unconscious	
Gender	String	Sex where Value: Male, Female	
Age_in_Years	Integer	Age in years of subjects	Level: Ratio
Is_Symptoms_Noted_on_Waking	Boolean	Symptoms noted on waking where	
Is_Atrial_Fibrillation_Coded	Boolean	Atrial fibrillation; not coded for pilot phase - 984 patients	
Is_CT_Before_Randomization	Boolean	CT before randomization	
Is_Infarct_Visible_on_CT	Boolean	Infarct visible on CT	
Is_Heparin_Before_Randomization	Boolean	Heparin within 24 hours prior to randomization	

Field Name	Type	Description	Properties
Is_Aspirin_Before_Randomization	Boolean	Aspirin within 3 days prior to randomization	
Systolic_Blood_Pressure_at_Randomization	Integer	Systolic blood pressure at randomisation (mmHg)	Level: Ratio
Face_Deficit	String	Presence or absence of face deficit where Y = True, N = False, C=can't assess	
Arm_Hand_Deficit	String	Presence or absence of an arm or hand deficit where Y = True, N = False, C=can't assess	
Leg_Foot_Deficit	String	Presence or absence of leg or foot deficit where Y = True, N = False, C=can't assess	
Dysphasia	String	Presence or absence of dysphasia where Y = True, N = False, C=can't assess	
Hemianopia	String	Presence or absence of hemianopia where Y = True, N = False, C=can't assess	

Field Name	Type	Description	Properties
Visuospatial_Disorder	String	Presence or absence of visuospatial disorder where Y = True, N = False, C=can't assess	
Cerebellar_Signs	String	Presence or absence of brainstem or cerebellar signs where Y = True, N = False, C=can't assess	
Deficit_Others	String	Presence or absence of other deficit where Y = True, N = False, C=can't assess	
Stroke_Subtype	String	A subtype of stroke, either total anterior circulation syndrome (TACS), partial anterior circulation syndrome (PACS), posterior circulation syndrome (POCS) and lacunar syndrome (LACS), and other (OTH)	

Field Name	Type	Description	Properties
Date_of_Randomization_Oxford	String	Year and month of randomization done every March 1 from 1991 to 1996; the date is in Oxford format (yyyy-mm); date of randomization per country is coded by country and year (code-yy)	
Local_Time_in_Hours	Integer	Local time in hours; (99-missing data) of randomization dropped	Level: Ordinal
Local_Time_in_Minutes	Integer	Local time in minutes; (99-missing data) of randomisation	Level: Ordinal
Local_Day_of_Week	String	Estimate of the local day of the week (assuming date is Oxford) where 1 - Sunday, 2-Monday, 3-Tuesday, 4-Wednesday, 5-Thursday, 6-Friday,	
Is_Trial_Aspirin_Allocated	Boolean	Trial aspirin allocated	

Field Name	Type	Description	Properties
Trial_Heparin_Allocated	String	Trial heparin allocated (M/L/N) where M in the main trial is coded as H=high in pilot; where M = high in the main trial, H = high in pilot, L = low in the main trial and N = avoid heparin; The terminology for the allocated dose of unfractioned heparin changed slightly from the pilot to the main study. Patients were allocated either 12500 units subcutaneously twice daily (coded as H in the pilot and M in the main trial), 5000 units twice daily (coded as L throughout) or to 'avoid heparin' (coded as N throughout).	

Field Name	Type	Description	Properties
Aspirin_Given_For_14_Days	String	Aspirin given for 14 days or till death or discharge where Y = True, N = False, U = Unknown	
Discharged_On_Long_Term_Aspirin	String	Discharged on long term aspirin (Y/N) where Y = True, N = False, U = Unknown	
Low_Dose_Heparin_Given_For_14_Days	String	Low dose heparin given for 14 days or till death/discharge where Y = True, N = False, U = Unknown	
Medium_Dose_Heparin_Given_For_14_Days	String	Medium dose heparin given for 14 days or till death/discharge where Y = True, N = False, U = Unknown	
Is_Medium_Dose_Heparin_Given_For_14_Days_in_Pilot	Boolean	Medium dose heparin is given for 14 days etc in the pilot (combine with above)	
Time_In_Days_On_Trial_Treatment	Integer	Estimate of time in days on trial treatment	Level: Ordinal

Field Name	Type	Description	Properties
Non_Trial_Subcutaneous_Heparin	String	Non trial subcutaneous heparin (Y/N) where Y = True, N = False, U = Unknown	
Non_Trial_Intravenous_Heparin	String	Non trial intravenous heparin where Y = True, N = False, U = Unknown	
Non_Trial_Antiplatelet_Drug	String	Non trial antiplatelet drug where Y = True, N = False, U = Unknown	
Anticoagulants_Others	String	Other anticoagulants given where Y = True, N = False, U = Unknown	
Glycerol_or_Manitol	String	Glycerol or manitol given where Y = True, N = False, U = Unknown	
Steroids	String	Steroids given where Y = True, N = False, U = Unknown	
Calcium_Antagonists	String	Calcium antagonists given where Y = True, N = False, U = Unknown	

Field Name	Type	Description	Properties
Haemodilution	String	Occurence of haemodilution where Y = True, N = False, U = Unknown	
Carotid_Surgery	String	Occurence of carotid surgery where Y = True, N = False, U = Unknown	
Thrombolysis	String	Occurence of thrombolysis where Y = True, N = False, U = Unknown	
Major_Non_Cerebral_Haemorrhage	String	Occurence of major non-cerebral haemorrhage where Y = True, N = False, U = Unknown	
Days_Elapsed_From_Randomization_to_Major_Non_Cerebral_Haemorrhage	Integer	Number of days elapsed from randomization to occurrence of major non-cerebral hemorrhage	Level: Ratio
Comment_on_Major_Non_Cerebral_Haemorrhage	String	Comment on the occurrence of major non-cerebral hemorrhage	

Field Name	Type	Description	Properties
Side_Effect_Others	String	Occurrence of other side effect where Y = True, N = False, U = Unknown	
Days_Elapsed_From_Randomization_to_Side_Effects	Integer	Number of days elapsed from randomization to occurrence of other side effects	Level: Ratio
Comment_on_Side_Effect	String	Comment on the occurrence of other side effects	
Ischaemic_Stroke	String	Ischaemic stroke as final diagnosis of initial event where Y = True, N = False, U = Unknown	
Haemorrhagic_Stroke	String	Hemorrhagic stroke as a final diagnosis of initial event where Y = True, N = False, U = Unknown	
Indeterminate_Stroke	String	Indeterminate stroke as final diagnosis of initial event where Y = True, N = False, U = Unknown	

Field Name	Type	Description	Properties
Not_A_Stroke	String	Not a stroke as final diagnosis of initial event where Y = True, N = False, U = Unknown	
Comment_on_Final_Diagnosis_of_Initial_Event	String	Comment on final diagnosis of the initial event	
Recurrent_Ischaemic_Stroke	String	Occurrence of ischaemic recurrent stroke within 14 days where Y = True, N = False, U = Unknown	
Days_Elapsed_From_Randomization_to_Recurrent_Ischaemic_Stroke	Integer	Number of days elapsed from randomization to occurrence of recurrent ischaemic stroke	Level: Ratio
Recurrent_Haemorrhagic_Stroke	String	Occurrence of haemorrhagic stroke within 14 days where Y = True, N = False, U = Unknown	
Days_Elapsed_From_Randomization_to_Recurrent_Haemorrhagic_Stroke	Integer	Number of days elapsed from randomization to occurrence of hemorrhagic stroke	Level: Ratio

Field Name	Type	Description	Properties
Unknown_Type	String	Occurrence of unknown type stroke within 14 days where Y = True, N = False, U = Unknown	
Days_Elapsed_From_Randomization_to_Unknown_Type	Integer	Number of days elapsed from randomization to occurrence of an unknown type of stroke	Level: Ratio
Pulmonary_Embolism_Within_14_Days	String	Occurrence of pulmonary embolism within 14 days where Y = True, N = False, U = Unknown	
Days_Elapsed_From_Randomization_to_Pulmonary_Embolism	Integer	Number of days elapsed from randomization to occurrence of pulmonary embolism within 14 days	Level: Ratio
Discharged_Alive_From_Hospital_Within_14_Days	String	Discharged alive from hospital within 14 days where Y = True, N = False, U = Unknown	

Field Name	Type	Description	Properties
Days_Elapsed_From_Randomization_to_Discharged_Alive_From_Hospital	Integer	Number of days elapsed from randomization to discharge alive from the hospital within 14 days	Level: Ratio
Discharge_Destination	String	Discharge destination where A = Home, B = Relatives home, C = Residential care, D = Nursing home, E = Other hospital departments and U-Unknown	
Dead_on_Discharge_Within_14_Days	String	The occurrence of death upon discharge where Y = True, N = False, U = Unknown; This death is not necessarily within 14 days of randomization	

Field Name	Type	Description	Properties
Days_Elapsed_From_Randomization_to_Dead_on_Discharge	Integer	Number of days elapsed from randomization to dead on discharge where death is not necessarily within 14 days of randomization	Level: Ratio
Cause_of_Death_Within_14_Days	String	Cause of death where 1 = Initial stroke, 2 = Recurrent stroke (ischaemic or unknown), 3 = Recurrent stroke (haemorrhagic, 4= Pneumonia, 5 = Coronary heart disease, 6 = Pulmonary embolism, 7 = Other vascular or unknown, 8 = Non-vascular and 0 = unknown	
Comment_on_Death_Within_14_Days	String	Comment on death within 14 days	
Dead_at_Six_Month_Follow_Up	String	Occurrence of death at six month follow-up where Y = True, N = False, U = Unknown	

Field Name	Type	Description	Properties
Days_Elapsed_From_Randomization_to_Date_of_Last_Contact	Integer	Number of days elapsed from randomization to date of the last contact	Level: Ratio
Days_Elapsed_From_Randomization_to_Death_at_Six_Month_Follow_Up	Integer	Number of days elapsed from randomization to death at six-month follow-up where death is not necessarily within 6 months of randomization	Level: Ratio
Cause_of_Death_at_Six_Month_Follow_Up	String	Cause of death where 1 = Initial stroke, 2 = Recurrent stroke (ischaemic or unknown), 3 = Recurrent stroke (haemorrhagic, 4= Pneumonia, 5 = Coronary heart disease, 6 = Pulmonary embolism, 7 = Other vascular or unknown, 8 = Non-vascular and 0 = unknown	

Field Name	Type	Description	Properties
Comment_on_Death_at_Six_Month_Follow_Up	String	Comment on death at six-month follow-up	
Fully_Recovered_at_Six_Month_Follow_Up	String	Fully recovered at six month follow-up where Y = True, N = False, U = Unknown	
Dependent_at_Six_Month_Follow_Up	String	Dependent at six month follow-up where Y = True, N = False, U = Unknown	
Place_of_Residence_at_Six_Month_Follow_Up	String	Place of residence at six month follow-up where A = Home, B = Relatives home, C = Residential care, D = Nursing home, E = Other hospital departments and U = Unknown	
On_Antiplatelet_Drugs_at_Six_Month_Follow_Up	String	On antiplatelet drugs at six month follow-up where Y = True, N = False, U = Unknown	

Field Name	Type	Description	Properties
On_Anticoagulants_at_Six_Month_Follow_Up	String	On anticoagulant at six month follow-up where Y = True, N = False, U = Unknown	
Days_Elapsed_From_Randomization_to_Date_Discharge_Form_Received	Integer	Number of days elapsed from randomization to date discharged form received	Level: Ratio
Days_Elapsed_From_Randomization_to_Date_at_Six_Month_Follow_Up_Done	Integer	Number of days elapsed from randomization to date at six-month follow-up	Level: Ratio
Abbreviated_Country_Code	String	Abbreviated country code	
Country_Code	Integer	Country code	Level: Nominal
Days_Elapsed_From_Randomization_to_Date_Discharge_Form_Completed	Integer	Number of days elapsed from randomization to date discharge form completed	Level: Ratio
Coding_of_Compliance	String	Coding of compliance where provisional categories for non-compliance are the following:	

Field Name	Type	Description	Properties
Is_Compliant_for_Aspirin	Boolean	Compliance with aspirin	
Is_Compliant_for_Heparin	Boolean	Compliance with heparin	
Is_Death_Indicator	Boolean	Indicator for death	
Time_of_Death_in_Days	Integer	Time of death or censoring in days	Level: Ordinal
Predicted_Probability_of_Death	Number	Predicted probability of death or dependence at 6 month	Level: Ratio
Predicted_Probability_of_Death_at_Six_Month	Number	Predicted probability of death at 6 month	Level: Ratio
Predicted_Probability_of_Death_at_14_Days	Number	Predicted probability of death at 14 days	Level: Ratio
Is_Dead_or_Alive_at_14_Days	Boolean	Known to be dead or alive at 14 days where 1 = yes and 0 = no; this does not necessarily mean that we know the outcome at 6 months	
Is_Death_Indicator_at_14_Days	Boolean	The indicator of death at 14 days	

Field Name	Type	Description	Properties
Six_Month_Outcome	String	Six month outcome where 1 = dead, 2 = dependent, 3 = not recovered, 4 = recovered, 0 or 9 = missing status	
Is_Initial_Stroke_Indicator	Boolean	Initial stroke as an indicator variable for the specific cause of death	
Is_Recurrent_Ischaemic_or_Unknown_Stroke_Indicator	Boolean	Recurrent ischaemic or unknown stroke as an indicator variable for the specific cause of death	
Is_Recurrent_Haemorrhagic_Stroke_Indicator	Boolean	Recurrent hemorrhagic stroke as an indicator variable for the specific cause of death	
Is_Pneumonia_Indicator	Boolean	Pneumonia as an indicator variable for the specific cause of death	
Is_Coronary_Heart_Disease_Indicator	Boolean	Coronary heart disease as an indicator variable for the specific cause of death	

Field Name	Type	Description	Properties
Is_Pulmonary_Embolism_Indicator	Boolean	Pulmonary embolism as an indicator variable for the specific cause of death	
Is_Other_Vascular_Indicator	Boolean	Other vascular or unknown as an indicator variable for the specific cause of death	
Is_Non_Vascular_Indicator	Boolean	Non-vascular as an indicator variable for the specific cause of death	
Is_Haemorrhagic_Stroke_Indicator_Within_14_Days	Boolean	Cerebral bleed/ hemorrhagic stroke within 14 days as an indicator variable for the specific cause of death; this is slightly wider definition than DRSH and is used for analysis of cerebral bleeds	
Is_Ischaemic_Stroke_Indicator_Within_14_Days	Boolean	The indicator of ischaemic stroke within 14 days	
Is_Indeterminate_Stroke_Indicator_Within_14_Days	Boolean	The indicator of indeterminate stroke within 14 days	

Field Name	Type	Description	Properties
Is_Any_Stroke_Indicator_Within_14_Days	Boolean	The indicator of any stroke within 14 days	
Is_Haemorrhagic_Transformation_Indicator_Within_14_Days	Boolean	The indicator of hemorrhagic transformation within 14 days	
Is_Pulmonary_Embolism_Indicator_Within_14_Days	Boolean	The indicator of pulmonary embolism within 14 days	
Is_Deep_Vein_Thrombosis_on_Discharge	Boolean	The indicator of deep vein thrombosis on the discharge form	
Is_Major_Non_Cerebral_Bleed_Indicator_Within_14_Days	Boolean	The indicator of major non-cerebral bleed within 14 days	
Is_Any_Non_Cerebral_Bleed_Indicator_Within_14_Days	Boolean	The indicator of any non-cerebral bleed within 14 days	

Sample Records

Field Name	Sample 1	Sample 2	Sample 3
Hospital Number	484	1	174
Delay in Hours at Randomization	28	40	40
Conscious State at Randomization	Fully Alert	Fully Alert	Fully Alert
Gender	Male	Female	Female
Age in Years	58	87	84

Field Name	Sample 1	Sample 2	Sample 3
Is Symptoms Noted on Waking	true	false	true
Is Atrial Fibrillation Coded	false	false	false
Is CT Before Randomization	true	true	false
Is Infarct Visible on CT	true	false	false
Is Heparin Before Randomization	false	false	false
Is Aspirin Before Randomization	false	false	false
Systolic Blood Pressure at Randomization	140	150	190
Face Deficit	no	no	yes
Arm Hand Deficit	yes	yes	yes
Leg Foot Deficit	yes	yes	yes
Dysphasia	no	yes	no
Hemianopia	no	no	no
Visuospatial Disorder	no	no	no
Cerebellar Signs	no	no	no
Deficit Others	no	no	no
Stroke Subtype	lacunar syndrome	partial anterior circulation syndrome	lacunar syndrome
Date of Randomization Oxford	wrz-95	maj-95	lis-93
Local Time in Hours	21	16	16
Local Time in Minutes	34	37	3
Local Day of Week	Wednesday	Monday	Tuesday
Is Trial Aspirin Allocated	false	true	true
Trial Heparin Allocated	avoid heparin	low in main trial	high in main trial
Aspirin Given For 14 Days			
Discharged On Long Term Aspirin			
Low Dose Heparin Given For 14 Days			
Medium Dose Heparin Given For 14 Days			

Field Name	Sample 1	Sample 2	Sample 3
Is Medium Dose Heparin Given For 14 Days in Pilot			
Time In Days On Trial Treatment	14	14	14
Non Trial Subcutaneous Heparin			
Non Trial Intravenous Heparin			
Non Trial Antiplatelet Drug			
Anticoagulants Others			
Glycerol or Manitol			
Steroids			
Calcium Antagonists			
Haemodilution			
Carotid Surgery			
Thrombolysis			
Major Non Cerebral Haemorrhage			
Days Elapsed From Randomization to Major Non Cerebral Haemorrhage			
Comment on Major Non Cerebral Haemorrhage			
Side Effect Others			
Days Elapsed From Randomization to Side Effects			
Comment on Side Effect			
Ischaemic Stroke			
Haemorrhagic Stroke			
Indeterminate Stroke			
Not A Stroke			
Comment on Final Diagnosis of Initial Event			
Recurrent Ischaemic Stroke			

Field Name	Sample 1	Sample 2	Sample 3
Days Elapsed From Randomization to Recurrent Ischaemic Stroke			
Recurrent Haemorrhagic Stroke			
Days Elapsed From Randomization to Recurrent Haemorrhagic Stroke			
Unknown Type			
Days Elapsed From Randomization to Unknown Type			
Pulmonary Embolism Within 14 Days			
Days Elapsed From Randomization to Pulmonary Embolism			
Discharged Alive From Hospital Within 14 Days			
Days Elapsed From Randomization to Discharged Alive From Hospital			
Discharge Destination			
Dead on Discharge Within 14 Days			
Days Elapsed From Randomization to Dead on Discharge			
Cause of Death Within 14 Days			
Comment on Death Within 14 Days			
Dead at Six Month Follow Up			yes
Days Elapsed From Randomization to Date of Last Contact			

Field Name	Sample 1	Sample 2	Sample 3
Days Elapsed From Randomization to Death at Six Month Follow Up			57
Cause of Death at Six Month Follow Up			pneumonia
Comment on Death at Six Month Follow Up			
Fully Recovered at Six Month Follow Up			
Dependent at Six Month Follow Up			
Place of Residence at Six Month Follow Up			
On Antiplatelet Drugs at Six Month Follow Up			
On Anticoagulants at Six Month Follow Up			
Days Elapsed From Randomization to Date Discharge Form Received			
Days Elapsed From Randomization to Date at Six Month Follow Up Done			244
Abbreviated Country Code	ARGE	UK	UK
Country Code	29	27	27
Days Elapsed From Randomization to Date Discharge Form Completed			
Coding of Compliance			
Is Compliant for Aspirin			
Is Compliant for Heparin			
Is Death Indicator	false	false	true
Time of Death in Days			57
Predicted Probability of Death	0.2412	0.7602	0.7247

Field Name	Sample 1	Sample 2	Sample 3
Predicted Probability of Death at Six Month	0.0393	0.211	0.1895
Predicted Probability of Death at 14 Days	0.0178	0.0449	0.0425
Is Dead or Alive at 14 Days	'false	'false	true
Is Death Indicator at 14 Days	false	false	false
Six Month Outcome			dead
Is Initial Stroke Indicator	false	false	false
Is Recurrent Ischaemic or Unknown Stroke Indicator	false	false	false
Is Recurrent Haemorrhagic Stroke Indicator	false	false	false
Is Pneumonia Indicator	false	false	true
Is Coronary Heart Disease Indicator	false	false	false
Is Pulmonary Embolism Indicator	false	false	false
Is Other Vascular Indicator	false	false	false
Is Non Vascular Indicator	false	false	false
Is Haemorrhagic Stroke Indicator Within 14 Days	false	false	false
Is Ischaemic Stroke Indicator Within 14 Days	false	false	false
Is Indeterminate Stroke Indicator Within 14 Days	false	false	false
Is Any Stroke Indicator Within 14 Days	false	false	false
Is Haemorrhagic Transformation Indicator Within 14 Days	false	false	false
Is Pulmonary Embolism Indicator Within 14 Days	false	false	false
Is Deep Vein Thrombosis on Discharge	false	false	false
Is Major Non Cerebral Bleed Indicator Within 14 Days	false	false	false

Field Name	Sample 1	Sample 2	Sample 3
Is Any Non Cerebral Bleed Indicator Within 14 Days	false	false	false