Table 1: Clinical and laboratory findings of the patients with thromboembolic events after Oxford–AstraZeneca and Johnson & Johnson COVID-19 vaccination. 0

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| **No** | **Authors** | **Type of Vaccine** | **Total No./**  **Sex/Age** | **Preexisting conditions / Medications** | **Time from vaccination (days)** | **Clinical presentations** | **Imaging Findings** | **Lab Findings** | **Outcome** |
| 1 | Aladdin, Y. et al.[[27](#_ENREF_27)] | AstraZeneca  (ChAdOx1 nCoV-19) | 36 y/o F | **-** | 14 days | Sudden onset of focal left-sided convulsions  Weakness in the left arm, Fever | Superior sagittal thrombosis  Extensive Dural venous sinus thrombosis of the superior sagittal, and  proximal left transverse sinus thrombosis | Platelet count: 94  cells×109/lit  PF4 IgG Assay:  Positive  d-Dimer :  Positive | Fatal |
| 2 | Bano F, et al.[[28](#_ENREF_28)] | AstraZeneca  (ChAdOx1 nCoV-19) | 53 y/o F  55 y/o M | **-**  - | 14 days  10 days | Headaches, Facial weakness,  Hemiparesis  Headaches, Right arm weakness | Superior sagittal sinus, Right sigmoid, Right transverse sinus thrombosis  Cortical veins, Superior sagittal sinus,  left transverse, left sigmoid sinus and  left internal jugular vein thrombosis | Platelet count: 24  cells×109/lit, PF4 IgG Assay: Positive, d-Dimer :  Positive  Platelet count: 21  cells×109/lit, PF4 IgG Assay: Positive, d-Dimer :  Positive | Fatal  Fatal |
| 3 | Bayas A, et al.[[17](#_ENREF_17)] | AstraZeneca  (ChAdOx1 nCoV-19) | 55 y/o F | - | 10 days | Conjunctival  congestion, Retro-orbital pain, and Diplopia | Bilateral superior ophthalmic vein thrombosis  Ischemic stroke in the left parietal lobe, MCA territory | Platelet count: 30  cells×109/lit  PF4 IgG Assay:  Negative | Alive |
| 4 | Bjørnstad-Tuveng TH, et al.[[18](#_ENREF_18)] | AstraZeneca  (ChAdOx1 nCoV-19) | 30 y/o F | Mild preeclampsia in a previous pregnancy | 7 days | Headache | CVST in  Transverse sinus, Frontal lobe, and Pulmonary artery.  With ICH and SAH | Platelet count: 37  cells×109/lit  PF4 IgG Assay:  Positive  d-Dimer :  Positive | Fatal |
| 5 | Blauenfeldt RA, et al.[[14](#_ENREF_14)] | AstraZeneca  (ChAdOx1 nCoV-19) | 60 y/o F | Hashimoto's thyroiditis and Hypertension | 9 days | left-sided weakness,  Eye deviation to the right | Right MCA infarct | Platelet count: 5  cells×109/lit  PF4 IgG Assay:  Positive  d-Dimer :  Positive | Fatal |
| 6 | Castelli GP, et al.[[19](#_ENREF_19)] | AstraZeneca  (ChAdOx1 nCoV-19) | 50 y/o M | - | 11 days | Headache  Deviation of the right buccal rim  loss of strength in the right lower limb  Slight visual impairment | CVST  In left transverse and sigmoid sinuses  And  ICH | Platelet count: 20  cells×109/lit    d-Dimer :  Positive | Fatal |
| 7 | D'Agostino V, et al.[[20](#_ENREF_20)] | AstraZeneca  (ChAdOx1 nCoV-19) | 54 y/o F | Meniere’s disease | 12 days | left side weakness | CVST  Multiple subacute intra-axial hemorrhages in atypical locations  SAH  Acute basilar thrombosis  Superior sagittal sinus thrombosis  Non-occlusive thrombosis of the vein of Galen  Myocardial infarction  Thrombus within the aortic arch and  left portal branch and  Right suprahepatic vein and  Bilaterally, Adrenal hemorrhage | Thrombocytopenia  d-Dimer :  Positive | Fatal |
| 8 | Dutta,A, et al.[[30](#_ENREF_30)] | AstraZeneca  (ChAdOx1 nCoV-19) | 51 y/o M | - | 6 days | Headache  Vomiting  Double vision and  Horizontal gaze  Papilledema, | Superior sagittal sinus and Transverse  sinus with presence of extensive venous collaterals thrombosis | Platelet count: NL  PF4 IgG Assay:  Negative | Alive |
| 9 | Franchini M et al.[[21](#_ENREF_21)] | AstraZeneca  (ChAdOx1 nCoV-19) | 50 y/o M | - | 7 days | Headache | CVST in left transverse and Sigmoid sinuses  Intra-parenchymal hemorrhage in the left cerebral hemisphere | Platelet count: 15  cells×109/lit  PF4 IgG Assay:  Positive  d-Dimer :  Positive | Fatal |
| 10 | Gessler F  et al.[[31](#_ENREF_31)] | AstraZeneca  (ChAdOx1 nCoV-19)  Johnson and Johnson(Ad26.COV2.S) | 47 y/o F  50 y/o F  44 y/o F | -  -  - | 12 days  7 days  10 days | Headache | Sinus thrombosis and ICH  Herniation | Platelet count: 9  cells×109/lit, d-Dimer :  Positive, PF4 IgG Assay:-  Platelet count: 24  cells×109/lit, d-Dimer :  Positive, PF4 IgG Assay:  -  Platelet count: 48  cells×109/lit, d-Dimer :  Positive, PF4 IgG Assay:  - | Fatal  Fatal  Fatal |
| 11 | Guan C.-Y, et al.[[32](#_ENREF_32)] | AstraZeneca  (ChAdOx1 nCoV-19) | 52 y/o M | - | 10 days | Headache  Neck pain | CVST at the left transverse sinus and sigmoid sinuses and  thrombosis of the left internal jugular vein | Platelet count: 99  cells×109/lit  PF4 IgG Assay:  Positive  d-Dimer :  Positive | Alive |
| 12 | Greinacher A et al.[[87](#_ENREF_87)] | AstraZeneca  (ChAdOx1 nCoV-19) | 9 Patients | 1 case with Chronic neurological disorder  1 case with type 1 von Willebrand disease and  Positive anticardiolipin antibodies | 9.3 (Range:5-16)days | - | -9 CVST  -Pulmonary embolism  -Splanchnic vein thrombosis  -Aortoiliac thrombosis  -Intra ventricular, iliofemoral vein,  -Multiple organ thromboses | Platelet count: 27.3  cells×109/lit  (Range 8-75)  PF4 IgG Assay:  7 Positive  2 Unknown  d-Dimer :  Positive in all cases | 5 Fatal  1 Unknown  3 Alive |
| 13 | Mehta PR et al.[[5](#_ENREF_5)] | AstraZeneca  (ChAdOx1 nCoV-19) | 2 M  Mean Age:  28.5 y/o (Range: 25-32) | 1 case with Primary sclerosing cholangitis | 7.5 days  (6-9) | Headache | CVST in Superior sagittal sinus, Cortical veins, and Superior sagittal sinus  With ICH and SAH | Platelet count: 24.5  cells×109/lit(Range 19-30)  PF4 IgG Assay:  1 Positive  1 unknown  d-Dimer :  1 Positive  1 unknown | 2 Fatal |
| 14 | Schultz NH et al.[[15](#_ENREF_15)] | AstraZeneca  (ChAdOx1 nCoV-19) | 4 F Mean age: 43  Range:37-54) | HypertensionOral contraceptive pill(OCP) 1,  Contraceptive vaginal ring 1,  Hormone-replacement  Therapy,  Antihypertensive agents | 8.7(Range:7-10) days | Headache (in all cases), Visual  Disturbances, Drowsiness, Abdominal  Pain, Hemiparesis | CVST in: Cortical veins,  Transverse sinus,Sigmoid  sinus,  Inferior sagittal sinus,  vein of Galen and Straight  sinus  all with ICH | Platelet count: Mean: 31.2  (Range:19-70) cells×109/lit  PF4 IgG Assay:  Positive in all cases  d-Dimer :  Positive in all cases | Alive :3 patients  Fatal: 1 Patient |
| 15 | Scully M. et al.[[24](#_ENREF_24)] | AstraZeneca  (ChAdOx1 nCoV-19) | 11 F  Mean age : 39.3  (Range:26-55)  5 M  Mean age : 32  (Range:21-48) | N/A | 11.7(Range:6-19) days | N/A | 13 CVST (In 2 cases with ICH and 1 with SAH)  2 MCA infarct  1 ICH  Additional findings in addition to CVST:  ICH  SAH  PVT(portal vein thrombosis)  PE(pulmonary embolism),  Ischemic bowel infarct,  AAT(acute aortic thrombosis)  IJVT(internal jugular vein thrombosis)  Thrombosis in the lung | Platelet count: Mean: 48  (Range:7-113) cells×109/lit  PF4 IgG Assay:  Done in 10 cases, 9 Positive and 1 Negative  d-Dimer :  Positive in 13 cases and 3 cases not done. | Alive:11 patients  Fatal: 5 Patients |
| 16 | Suresh P,et al[[33](#_ENREF_33)] | AstraZeneca  (ChAdOx1 nCoV-19) | 27y/o M | - | 2 days | Headaches, Eye floaters  and Vomiting | Cerebral venous sinus thrombosis (CVST)  Parenchymal haemorrhage | Platelet count: 90 cells×109/lit  PF4 IgG Assay:  Positive  d-Dimer :  Positive | Fatal |
| 17 | Tobaiqy M et al.[[25](#_ENREF_25)] | AstraZeneca  (ChAdOx1 nCoV-19) | 1F  Age between :18–64 | N/A | N/A | N/A | CVST,  With  ICH And  Pulmonary embolism  Peripheral artery thrombosis | N/A | Not Resolved |
| 18 | Tølbøll Sørensen AL et al.[[34](#_ENREF_34)] | AstraZeneca  (ChAdOx1 nCoV-19) | 30 y/o F | Migraine  Oral contraceptive pill (OCP)  Prothrombin mutation | 10 days | Persistent Headache  and General malaise | CVST | Platelet count: 51  cells×109/liter  d-Dimer :  Positive  PF4 IgG Assay:  Positive | Alive |
| 19 | Walter U, et al.[[35](#_ENREF_35)] | AstraZeneca  (ChAdOx1 nCoV-19) | 31 y/o M | - | 8 days | Acute headache, Aphasia, and Hemiparesis | Carotid arterial thrombosis Middle cerebral artery occlusion | Platelet count: NL  d-Dimer :  Positive  PF4 IgG Assay:  Positive | Alive |
| 20 | Wolf ME, et al.[[26](#_ENREF_26)] | AstraZeneca  (ChAdOx1 nCoV-19) | 3F  34.6 y/o(Range : 22-46) | - | 6.3 days(4-8) | Headache in all cases  Epileptic seizure  Aphasia and  Hemianopia | CVST  In  Ascending cerebral veins,  Superior sagittal sinus, Transverse sinus, and also Sigmoid sinus  with ICH and SAH | Platelet count: 75.5  cells×109/liter (Range 60-92)  PF4 IgG Assay:  Positive  d-Dimer :  Positive | All Alive |
| 21 | Clark, R. et al.[[29](#_ENREF_29)] | Ad26.COV2.S (Johnson & Johnson/ Jansen) | 40 y/o F | - | 12 days | headache, photophobia, and intermittent  dizziness | Cerebral venous sinus  thrombosis (CVST) involving the left transverse and  Sigmoid sinuses, extending into the left internal jugular vein | Platelet count: 20  cells×109/lit  d-Dimer :  Positive  PF4 IgG Assay:  Positive | Alive |
| 22 | Muir KL et al.[[23](#_ENREF_23)] | Johnson and Johnson | 48 y/o F | - | 14 days | Malaise and Abdominal pain  and then  Headache | CVST in the right transverse  And Straight sinuses.  And  Splanchnic -vein thrombosis | Platelet count: Mean: 13cells×109/lit  PF4 IgG Assay:  Positive  d-Dimer :  Positive | Critically ill |
| 23 | See I et al.[[16](#_ENREF_16)] | Johnson & Johnson | 12 F  8 (18-39)  4(>40) | Obesity in 6 patients  Combined oral contraceptives (OCP)in 1 patient | 8.8 days (Range: 6-13) | Headache 11 patients  Other symptoms:  Back pain,  Abdominal pain, lethargy, Myalgia, nausea, Vomiting, fever, Dyspnea, Chills, Photophobia, Cognitive impairment, Blurred vision, Right side weakness | 12 CVST in:  Transverse sinus, Sigmoid sinus,  Straight sinus,  Superior sagittal sinus,  Internal jugular vein  with  7 patients ICH and  and 8 patients with non-CVST including Thromboses including:  Portal vein thrombosis  lower extremity deep vein thrombosis | Platelet count: Mean: 45.7  (Range:9-127) cells×109/lit  PF4 IgG Assay:  Done in 11 cases, all Positive  d-Dimer : Positive in all patients | 4 patients were discharged to home.  Fatal 3 patients  Other :  Intensive care unit (ICU) care : 3  Non-ICU hospitalization: 2 |
|  | Total | AstraZeneca  (ChAdOx1 nCoV-19) | 51  In 42 patients, sex was reported (28 F, 14M) | 2 Patients on OCP | 9.1 days  Range : (4-19) | Headaches (most frequent complain ) | CVST:45  MCA infarct: 4  ICH:4  (CVST+ICH/SAH: 19) | Platelet count: 50  cells×109/lit  (5-113)  PF4 IgG Assay:  Positive: 35  Negative: 3  Unknown:11  d-Dimer :  Positive: 43  Unknown:5 | Alive:24  Fatal:25  Unknown:2 |
|  | Total | Ad26.COV2.S (Johnson & Johnson/ Jansen) | 15 F | 6 Patients with Obesity  One on OCP | 10.4(Range: 6-14) | Headache most frequent presenting complain | 15 CVST  CVST+ICH/SAH: 10) | Platelet count: Mean: 43  cells×109/lit  (Range:9-127)  PF4 IgG Assay:  Positive in 12 cases  Unknown in 2 cases  d-Dimer : 15  Positive in all cases | Discharged: 5  Fatal: 4  Critically ill:4  Non-ICU hospitalization:2 |
| F: Female, M: Male, N/A: not applicable, CVST: cerebral venous sinus thrombosis, MCA: Middle cerebral artery, ICH: Intracerebral Hemorrhage, SAH: Subarachnoid hemorrhage, PF4: Platelet Factor4 | | | | | | | | | |