

Supplementary Table 1 Summary of carcinoma caused by the use of immunosuppressants after liver transplantation from the literature

Ref.	Age/ Sex	Primary disease	Immunosu ppression	Comorb idity	Sympto m	Treatmen t	Outco me
Kitahara, S et al, 1991	6/M	Biliary atresia	Tacrolimus	Monoclonal lymphoma	Diarrhoea	Immunosuppression reduction, acyclovir	Recovered
Halmons, O et al, 1996	54/M	Hepatocellular carcinoma	Tacrolimus, mycophenolate, steroid	Kaposi's sarcoma	Maculonodular lesions with irregular shape on the left leg	Sirolimus	Recovered
Colina, F et al, 1996	54/M	Cirrhosis	Tacrolimus, prednisolone	Kaposi's sarcoma	Evening fever, liquid diarrhoea, abdominal pain	Wide spectrum antibiotic	Died
Rezeig, M et al, 1997	65/M	Cirrhosis	Tacrolimus	Kaposi's sarcoma	Papular eruption on legs	Immunosuppression reduction	Recovered

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Thalha mmer- Scherre r, R et al, 1999	65/ M	Hepatoc ellular cancer	Prednisone, cyclosporin e and azathioprin e	Leukemi a	Recurrent dyspnea	Antibiotic prophylax is, cytoreduc tive therapy with hydroxyu rea, cytarabine	Died
Tartaro ne, A et al, 2002	56/ M	Hepatoc ellular carcino ma	Cyclosporin e, prednisone	Pulmon ary blastom a	Asympto m	Chemothe rapy	Died
Hernán dez, G et al, 2003	47/ M	Liver failure	Tacrolimus, prednisone	Oral squamo us cell carcino ma	Asympto m	Surgeon	Recov ered
Venzke , A et al, 2003	0.5/ M	Biliary atresia	Mycophenol ate,tacrolim us	B-cell lympho ma	Acute abdomen	Basilixima b	Recov ered
Gardne r, R et al, 2004	6.5/ W	Cryptog enic cirrhosis	Cyclosporin e, prednisone	T-cell lympho ma	Asympto m	Chemothe rapy	Recov ered
Lundel l, R et	15/ W	Liver failure	Tacrolimus, prednisone,	T-cell lympho	Pharyngi tis,	Immunos uppressio	Recov ered

Ref.	Age/ Sex	Primary disease	Immunosu ppression	Comorb idity	Sympto m	Treatmen t	Outco me
al, 2004			corticosteroi ds	ma	cervical adenopat hy, fever	n reduction, chemothe rapy	
Sato, T et al, 2005	12/ W	Ornithin e transcar bamylas e deficien cy	Tacrolimus, azathioprin e	Acute promyel ocytic leukemi a	Malaise and fever	Chemothe rapy	Recov ered
Díaz, De Liaño A et al, 2005	64/ M	Cirrhosi s	Tacrolimus	Esophag eal squamo us cell carcino ma	Dysphag ia for solids	Surgery and an Ivor-lewis oesophag ectomy	Recov ered
Bensale h, H et al, 2007	69/ M	Cirrhosi s	Tacrolimus, prednisone	Merkel cell carcino ma	Papular lesion occurrin g on a surgical scar	Radiother apy, prednison e reduction	Recov ered
Nagata , Y et al, 2007	57/ W	End-Sta ge liver disease	Tacrolimus	Gastric cancer	Asympto m	A gastric resection	Recov ered
Pourna	74/ W	Hepatoc	Tacrolimus	Conjunc	Nasal	Surgery,	Recov

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ras, J et al, 2007	M	cellular cancer		tival intraepit helial neoplasi a	pterygiu m	mitomyci n	ered
Mydin, A et al, 2007	50/ M	Cirrhosi s	Mycopheny late, tacrolimus, prednisolon e	Head and Neck Cancer	Right neck swelling	Radiother apy, cetuximab	Recov ered
Willia ms, K et al, 2008	4/W	Biliary atresia	Steroids, pacrolimus	Lympho ma	Asympto m	Chemothe rapy	Recov ered
Yukse kaya, H et al, 2009	3/W	Tyrosine mia type-1	Tacrolimus, steroids, methylpred nisolone	Kaposi's sarcoma	Wheezin g	Sirolimus	Recov ered
Ahmed , F et al, 2009	23/ W	Liver failure	Cyclophosp hamide	Chronic myelom onocytic leukemi a	Oral thrush and recurrent herpes simplex virus infection, fatigue	5-azacitidi ne therapy, allogeneic stem cell transplant , tacrolimu s,	Recov ered

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						mycophen olate and methotrex ate	
Amin, A et al, 2009	16/ M	Primary sclerosin g cholangi tis	Sirolimus, tacrolimus, and prednisone	Primary cutaneo us T-cell lympho ma	Nonprur itic plaque	Narrowba nd ultraviolet b, irradiatio n light	Recov ered
Shoji, F et al, 2009	58/ W	Primary biliary cirrhosis	Cyclosporin e, steroids, methylpred nisolone	Multiple pulmon ary mucosa- associate d lymphoi d tissue lympho mas	Rowing nodules in the right lower lobe of the lung	Right pulmonar y resection	Recov ered
Stoebn er, P et al, 2009	54/ W	Fulmina nt hepatitis	Antithymoc yte globulin, methylpred nisolone, tacrolimus	Kaposi's sarcoma	Purplish- Blue nodular lesions	Immunos uppressio n reduction	Recov ered

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Kitahara, S et al, 2010	6/M	Biliary atresia	Tacrolimus, prednisone	Diffuse large cell malignant lymphoma	Diarrhoea	Immunosuppression reduction, acyclovir	Recovered
Tutarel, O et al, 2010	54/M	Hepatic metastases of a gastric neuroendocrine carcinoma	Tacrolimus	Mycosis fungoides	Dysphagia	Corticosteroids	Recovered
Celtik, C et al, 2011	1/W	Liver failure	Tacrolimus, mycophenolate	Kaposi's sarcoma	Subconjunctival bleeding, cervical lymphadenopathy, periorbital edema, and ecchymosis	Paclitaxel, sirolimus	Recovered

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Cheng, E et al, 2011	1/W	Liver failure	Thymoglob ulin, tacrolimus, steroids and mycophenol ate	Diffuse large B-cell lympho ma	Diarrhea and decrease d oral intake	Immunos uppressio n reduction, cyclophos phamide, steroids, anti-CD20 monoclon al antibody, gancyclov ir	Recov ered
Cheng, F et al, 2011	15/ W	End-Sta ge liver disease	Cyclosporin e	Phyllode s tumor	A lump in left breast	Mastecto my of the mass, tacrolimu s	Recov ered
Kanam oto, M et al, 2011	65/ M	Hepatoc ellular carcino ma	Tacrolimus	Lung cancer	Dyspnea	Tacrolimu s reduction, partial resection	Recov ered
Liu, X et al, 2011	61/ W	Hepatoc ellular carcino ma	Tacrolimus	Dnterdi gitating dendriti c cell	Asympto matic lymph node	CHOP chemothe rapy(cyclo phospha	Died

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				sarcoma		mide, doxorubic in, vincristine , and prednison e)	
Dantul uri, S et al, 2012	18/ W	Neonata l sclerosin g cholangi tis	Tacrolimus, prednisolon e, mycophenol ate	Follicula r carcino ma of the thyroid	Right-sid ed thyroid swelling	Total thyroidect omy	Recov ered
Fang, Y et al, 2013	18/ M	Biliary atresia	Cyclosporin e, tacrolimus	T-cell acute lympho blastic leukaem ia	Night sweats and shortness of breath on exertion	Azathiopr ine and prednison e	Died
Akar, E et al, 2014	3/M	Hepatob lastoma	Tacrolimus, prednisolon e	T-cell acute lympho blastic leukemi a	Cough	Sirolimus, chemothe rapy	Died

Ref.	Age/ Sex	Primary disease	Immunosu ppression	Comorb idity	Sympto m	Treatmen t	Outco me
Akar, E et al, 2014	3.5/ M	Progressive familial Intrahepatic cholestasis	Tacrolimus	Burkitt lymphoma	Multiple millimeter-sized nodular lesions	Sirolimus, chemotherapy	Recovered
Manya m, B et al, 2015	71/ M	End-Stage cryptogenic cirrhosis	Tacrolimus	Head and neck cancer	Bilateral lymphadenopathy	Sirolimus	Died
Obioha , J et al, 2017	67/ W	Autoimmune hepatitis	Tacrolimus, mycophenolate	Merkel cell carcinoma	8-cm plaque on the left hip	Chemotherapy	Died
Gaeta, L et al, 2017	73/ W	Hepatocellular carcinoma	Cyclosporine, mycophenolate	Colorectal cancer	Asymptomatic	Mucosectomy	Recovered
Garzin o-Dem o, P et al, 2017	55/ W	Cirrhosis	Tacrolimus, mycophenolate	Kaposi's sarcoma	A reddish-violet colored mass on the vestibula	Everolimus	Recovered

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					r fornix of the premaxil la		
Lewis, D et al, 2017	58/ M	Cryptog enic liver disease	Tacrolimus	T-cell lympho ma	"Ringwo rm"-like lesion on left posterior shoulder	Tacrolimu s reduction, bexaroten e	Recov ered
Mizun o, H et al, 2017	62/ W	Chronic hepatitis	Methylpred nisolone, mycophenol ate	NK/T cell lympho ma	Gingival ulcers	Chemothe rapy	Recov ered
Zen, Y et al, 2020	21/ W	Biliary atresia	Tacrolimus	Perihilar cholangi ocarcino ma	Jaundice	Chemothe rapy	Recov ered
Xin, H et al, 2021	65/ W	Cirrhosi s	Tacrolimus	Merkel cell carcino ma	Asympto matic nodule	Surgical resection, radiothera py	Recov ered
Kondo, T et al, 2022	52/ M	Alcoholi c liver injuries	Methylpred nisolone	Head and neck cancer	Right neck swelling	Cisplatin, radiothera py	Died
Ari, D	64/	Hepatoc	Tacrolimus	Diffuse	Asympto	Everolim u	Recov

Ref.	Age/ Sex	Primary disease	Immunosu ppression	Comorb idity	Sympto m	Treatmen t	Outco me
et al, 2023	M	cellular cancer	and mycophenol ate	large B-cell lympho ma	m	s	ered

F: Female; M: Male