

Kidney +/- Pancreas Transplant

Site Applicability

Vancouver General Hospital

Pathway Patient Goals

Desired Outcomes	
Hemodynamically Stable:	Maintain SBP > 100 mm Hg and CVP between 10-16 cm H ₂ O
Adequate Oxygenation:	O ₂ sat > 92% with or without O ₂
Renal Function: u/o	U/O >100 ml/hr, Day 1, 20% reduction in creatinine Goal weight gain: max. increase of 5% of base weight
Tolerating Diet:	Maintain fasting blood sugar between 3.3- 6.4mmol/L Eating > 60% of diet; no nausea or vomiting
Adequate Sleep/Rest:	Pt report feeling rested; pain controlled
Regular Bowel Pattern:	as per pre-op
Pain Free:	engage in ADL's; sleeps > 4 consecutive hrs
Knowledge:	Able to demonstrate knowledge about anti-rejection medications, signs and symptoms of infection & rejection, awareness of follow-up appointment with post-transplant clinic

Inclusion Criteria

Cadaveric & Living (related or non-related) and Renal/Pancreas transplantation

Exclusion Criteria

Nephrectomy

Home Discharge Criteria

Instructions

1. Review pathway once per shift for patient care goals and expected outcomes
2. Do not document on this pathway, complete documentation in the Electronic Health Record (Cerner) or paper chart as per policy

Pre-op Planning	
Care Category	Expected Outcomes
Special Considerations	<ul style="list-style-type: none"> Determine: <ul style="list-style-type: none"> Hypertension Diabetes Family History Elevated cholesterol Allergies Other
Psychosocial History	<ul style="list-style-type: none"> Determine: <ul style="list-style-type: none"> Psychiatric Illness History of traumatic stress Confusion with previous surgery Cage score
Discharge Planning	<ul style="list-style-type: none"> Planning for: <ul style="list-style-type: none"> Adequate home supports (if applicable) Accommodation arranged for patients who live outside of lower mainland (if applicable) Clinic orientation Immunosuppression prescription faxed to home pharmacy Brown bag of immunosuppression received and reviewed to patient Prescriptions for Non-immunosuppression medications given to patient

Admission Day to SOT unit		
Categories/ Focus/ Care	Expected Outcomes	
Discharge Planning/Teaching	<ul style="list-style-type: none"> Assess home support Hospital course explained to patient & family Patient & family information pamphlet "Patient health guide after kidney transplant" pamphlet given to patient 	
Tests	<ul style="list-style-type: none"> CBC, diff, platelets STAT PTT, INR, glucose STAT Electrolytes, amylase STAT Creatinine, BUN STAT Proteins: Total/Albumin STAT Bilirubin: T STAT G&S STAT Chest X-ray (PA & Lateral) STAT 	<ul style="list-style-type: none"> Ca, PO4, Mg STAT 1 clotted specimen for tissue typing (KPx) 1 red top and 1 green top for immunology If 2nd or >tx do send red top tube Anti-HLA antibody crossmatch ECG STAT Serum B-HCG for all female patients < 45 yrs old Study urine and blood specimens (as ordered) Call immunology for ANTI HLA cross match
Treatments/ Assessments	<ul style="list-style-type: none"> Nursing assessment Vital Signs, Pulse Oximeter Glucometer as ordered Height, Weight S/L Shower Assess for type of dialysis and last HD run; access site/type PD cavity emptied 	
Medications	<ul style="list-style-type: none"> As ordered pre-op STAT on admission (cadaveric Tx) Sent to PCC Amphotericin to OR 	
Activity/Rest and/or ADLs	<ul style="list-style-type: none"> Performs ADL independently 	
Pain	<ul style="list-style-type: none"> Pain scale and relief options reviewed "Pain Control after Surgery" pamphlet provided 	
Nutrition	<ul style="list-style-type: none"> Cadaveric NPO on admission LRR NPO from midnight 	
Elimination	<ul style="list-style-type: none"> Saline Enema PR STAT (Cadaveric Tx) Normal BM U/O if any per day 	
Anxiety/Fear	<ul style="list-style-type: none"> Discuss patient/family fears re: surgery or anesthesia 	
Consults/Other	<ul style="list-style-type: none"> Anesthesia Nephrology Urology Other 	

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Desired Outcomes	<ul style="list-style-type: none"> • Alert and oriented • Patient & Family verbalize understanding post-op care • Explain change in health status after transplantation • Blood work within normal limits • Maintain BS level between 3.3-6.4mmol/L • Adequate oxygenation • Respirations easy • Clear lung sounds • Vital signs within normal limits Afebrile • Cage score 0; if > 0, consult CDRT • Hemodynamically stable • Tolerating diet • Adequate sleep/rest
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PAR/Post-Op SOT Unit Day 0		
Categories/ Focus/ Care	Expected Outcomes	
Discharge Planning/Teaching	<ul style="list-style-type: none"> Post-op course in PAR within normal limits Reinforce pain scale Reinforce post care plan Surgeon communicates with family post op 	
Tests	<ul style="list-style-type: none"> First 24 hours: lytes, urea and creatinine 0, 8, 16, 24h after surgery CBC and diff Lytes, BUN, Creatinine, Fasting blood glucose Ca, PO4, Mg blood & urine cultures prn for temp > 38.0°C Serum Amylase (KPTx) Additional BW (Mon & Thurs) Urine C&S q Mon & Thurs (KPTx) Tacrolimus Level (trough level before am dose) Cyclosporine Level (trough level before am dose) 	
Treatments/ Assessments	<ul style="list-style-type: none"> Nursing assessment Oxygen (rate, delivery) Pulse oximetry; temp Q4H Vital signs Q1H – including CVP Blood Glucose q2h per sliding scale (KPTx) I/O q1h, replace 1:1 x24-48h Central line assessment, if applicable Honeycomb dressing D&I x 7 days, reinforce PRN IV maintenance fluid as ordered IV Replacement fluid as ordered Peripheral IV/Saline lock maintenance 	
Medications	<ul style="list-style-type: none"> Pantoprazole Antihypertensive Antibiotics 	<ul style="list-style-type: none"> Immunosuppression Gancyclovir Basiliximab
Activity/Rest and/or ADLs	<ul style="list-style-type: none"> Deep breathing and coughing q1h Sit on side of bed Incentive spirometer 	
Pain	<ul style="list-style-type: none"> Epidural analgesia protocol PCA protocol 	
Nutrition	<ul style="list-style-type: none"> NPO 	
Elimination	<ul style="list-style-type: none"> Foley to straight drainage x 96h Monitor cumulative I/O - Q1H x24h 	
Anxiety/Fear	<ul style="list-style-type: none"> Team supports patient/family to explore feelings and issues of outcome of surgery and fear of diagnosis 	
Consults/Other	<ul style="list-style-type: none"> Pharmacist Urology Physiotherapy 	<ul style="list-style-type: none"> POPS Social Work Dietician

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Desired Outcomes	<ul style="list-style-type: none"> • Alert & oriented • Patient & family verbalize post-op care • Respiratory rate > 8/min • Adequate oxygenation; O2 Sat > 92% • Breath sounds clear all lung fields • Blood work within acceptable limits • Maintain BS level between 3.3-6.4mmol/L • CVP 10-16 cm H2O • Hemodynamically stable • Afebrile • C&S Protocol > 38°C • IV/CVC site free from pain, redness, swelling • IV/CVC dressing dry: intact • Pain control adequate for DB & C • No nausea or vomiting • Urine output > 100 ml/hr • Dressings intact & dry • Hemovac drainage within normal range • Adequate sleep/rest
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Post-Op Day 1	
Categories/ Focus/ Care	Expected Outcomes
Discharge Planning/Teaching	<ul style="list-style-type: none"> • Discuss self medication program and list medications on white board • Reinforce pain scale • Reinforce post care plan
Tests	<ul style="list-style-type: none"> • CBC, and diff • Lytes, BUN, & Creat, Fasting blood glucose • Ca, PO4, Mg • Serum Amylase (KPTx) • Additional blood work (Mon & Thur) • Urine C&S Mon & Thurs (KPTx) • Tacrolimus Level (trough level before am dose) • Cyclosporine Level (trough level before am dose)
Treatments/ Assessments	<ul style="list-style-type: none"> • Nursing assessment • O2 nasal prongs 3L or D/C • Pulse oximetry q4h • Vital signs q2-4h according to POPS • CVP q2-4 • Blood Glucose q2h per sliding scale (KPTx) • Central line assessment • U/O q1-2h • Weight before breakfast • Honeycomb dressing D&I x 7 days, reinforce PRN • Dextran 40 in N/S over 24hours q2days (KPTx) • Maintenance IV D5 ½ N/S at prescribed rate • IV replacement fluid as ordered • Peripheral IV/Saline lock maintenance
Medications	<ul style="list-style-type: none"> • As ordered
Activity/Rest and/or ADLs	<ul style="list-style-type: none"> • Physiotherapy assessment • Bed bath with assist • Chair BID with assist • Deep breathing and coughing q1h, incentive spirometer at bedside
Pain	<ul style="list-style-type: none"> • Epidural protocol • PCA protocol • Pain assessment q4h
Nutrition	<ul style="list-style-type: none"> • Full Fluid → DAT if No Nausea • NPO Progress as ordered (KPTx)
Elimination	<ul style="list-style-type: none"> • Foley → straight drainage • I/O → q2h x 24h
Anxiety/Fear	<ul style="list-style-type: none"> • Team supports patient/family to explore feelings and issues of outcome of surgery and fear of diagnosis
Consults/Other	<ul style="list-style-type: none"> • Pharmacist

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	<ul style="list-style-type: none"> • Anesthesia • Endocrine
Desired Outcomes	<ul style="list-style-type: none"> • Alert and oriented • Patient & family verbalize understanding of post op care and outcome of surgery • Respiratory rate > 8/min • Adequate oxygenation, O2 sat >92% • Breath sounds clear all lung fields Blood work within acceptable limits • Maintain BS level between 3.3-6.4mmol/L • CVP 10-16cm H2O • Hemodynamically stable • Afebrile • C&S protocol • IV/CVC site free from pain, redness, swelling • IV/CVC dressing dry: intact • Pain control adequate for DB&C and mobilization • No nausea or vomiting • Urine output > 100 ml/hr • Dressings intact & dry • Hemovac drainage within normal range • Adequate sleep/rest

Post-Op Day 2	
Categories/ Focus/ Care	Expected Outcomes
Discharge Planning/Teaching	<ul style="list-style-type: none"> • Teach self-medication program to patient/family • 'Patient Health Guide After Kidney Transplantation' booklet given to patient/family • Reinforce pain management strategies • Reinforce post care plan
Tests	<ul style="list-style-type: none"> • CBC, and diff • Lytes, BUN, & Creat, • Fasting blood glucose • Ca, PO4, Mg • Serum Amylase (KPTx) • Additional blood work (Mon & Thur) • Urine C&S Mon &Thurs (KPTx) • Tacrolimus Level (trough level before am dose) • Cyclosporine Level (trough level before am dose)
Treatments/ Assessments	<ul style="list-style-type: none"> • Nursing assessment • O2 D/C • Pulse oximetry q12h and PRN • Vital signs q4h • D/C CVP • Blood Glucose q2-4h per sliding scale (KPTx) • Central line assessment • U/O q1-2h • Weight before breakfast • Honeycomb dressing D&I x 7 days, reinforce PRN • Maintenance IV D5 ½ N/S at prescribed rate • IV replacement fluid D/C • Peripheral IV/Saline lock maintenance
Medications	<ul style="list-style-type: none"> • As per MAR
Activity/Rest and/or ADLs	<ul style="list-style-type: none"> • Basin with assist • Chair TID with assist • Walk BID with assist • Deep breathing & coughing q1h, incentive spirometer
Pain	<ul style="list-style-type: none"> • Epidural protocol, wean or consider d/c • PCA protocol, wean or consider d/c • Pain assessment q4h
Nutrition	<ul style="list-style-type: none"> • Full Fluid → DAT if No Nausea • NPO Progress as ordered (KPTx) • Dietician to assess PRN
Elimination	<ul style="list-style-type: none"> • Foley → straight drainage • I/O → q6h until discharged home

Anxiety/Fear	<ul style="list-style-type: none"> Team supports patient/family to explore feelings and issues of outcome of surgery and fear of diagnosis
Consults/Other	<ul style="list-style-type: none"> Anesthesia Endocrine
Desired Outcomes	<ul style="list-style-type: none"> Alert and oriented Patient & family verbalize understanding of post op care and outcome of surgery Respiratory rate > 8/min Adequate oxygenation, O2 sat >92% Breath sounds clear all lung fields Blood work within acceptable limits Maintain BS level between 3.3-6.4mmol/L Hemodynamically stable Afebrile C&S Protocol IV/CVC site free from pain, redness, swelling IV/CVC dressing dry: intact Pain control adequate for DB&C and mobilization Tolerating diet No nausea or vomiting Hemovac drainage within normal range, if applicable Adequate sleep/rest

Post-Op Day 3	
Categories/ Focus/ Care	Expected Outcomes
Discharge Planning/Teaching	<ul style="list-style-type: none"> • Arrange clinic orientation • Review home support • Reinforce post-op care plan • Review medications (indications and side effects) • Patient administers own medications • Review S&S rejection and infection • 'Patient health guide after kidney transplant' booklet reviewed
Tests	<ul style="list-style-type: none"> • CBC, and diff • Lytes, BUN, & Creat, • Fasting blood glucose • Ca, PO₄, Mg • Serum Amylase (KPTx) • Additional blood work (Mon & Thur) • Urine C&S Mon & Thurs (KPTx) • Tacrolimus Level (trough level before am dose) • Cyclosporine Level (trough level before am dose)
Treatments/ Assessments	<ul style="list-style-type: none"> • Nursing assessment • Room air • Pulse oximetry q12h or as ordered • Vital signs q4-12h or as ordered • Blood Glucose QID (KPTx) • U/O q4-6h or as ordered • Weight before breakfast • Dextran 40 in N/S over 24hours q2days (KPTx) • Assess central line, if appropriate • Peripheral IV/Saline lock maintenance
Medications	<ul style="list-style-type: none"> • As per MAR
Activity/Rest and/or ADLs	<ul style="list-style-type: none"> • Basin/sink with assist • Chair TID with assist • Walk BID with assist • Deep breathing & coughing q1h; incentive spirometer
Pain	<ul style="list-style-type: none"> • PO analgesics prn • Pain assessment q4h
Nutrition	<ul style="list-style-type: none"> • DAT • Diet progress as ordered (KPTx)
Elimination	<ul style="list-style-type: none"> • Foley → straight drainage • Bowel protocol prn
Anxiety/Fear	<ul style="list-style-type: none"> • Team supports patient/family to explore feelings and issues of outcome of surgery and fear of diagnosis
Consults/Other	<ul style="list-style-type: none"> • Home Care

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	<ul style="list-style-type: none"> • Social Worker • Diabetic RN teaching (if applicable)
Desired Outcomes	<ul style="list-style-type: none"> • Alert and oriented • Patient & family verbalize understanding of post op care & outcome of surgery • Respiratory rate > 8/min • Adequate oxygenation, O2 sat >92% • Breath sounds clear all lung fields • Blood work within acceptable limits • Maintain BS level between 3.3-6.4mmol/L • Hemodynamically stable • Afebrile • C&S Protocol • IV/CVC site free from pain, redness, swelling • IV/CVC dressing dry: intact • Pain control adequate for DB&C and mobilization • Tolerating diet • No nausea or vomiting • Voiding >30cc/hr • Normal bowel movement • Wound healing • Adequate sleep/rest

Post-Op Day 4	
Categories/ Focus/ Care	Expected Outcomes
Discharge Planning/Teaching	<ul style="list-style-type: none"> • Confirm discharge date and first clinic follow-up appointment • Update 'My discharge plan' • First Clinic appointment arranged • Clinic orientation done • Review and reinforce 'self-medications', S&S rejection and infection • Patient administers own medications • Foley d/c and patient monitors own I/O
Tests	<ul style="list-style-type: none"> • CBC, and diff • Lytes, BUN, & Creat, • Fasting blood glucose • Ca, PO4, Mg • Serum Amylase (KPTx) • Additional blood work (Mon & Thur) • Urine C&S Mon & Thurs (KPTx) • Tacrolimus Level (trough level before am dose) • Cyclosporine Level (trough level before am dose)
Treatments/ Assessments	<ul style="list-style-type: none"> • Nursing assessment • Room air • Pulse oximetry q shift • Vital signs BID • Blood Glucose QID (KPTx) • Weight before breakfast • Assess or d/c central line, if applicable • Peripheral IV/Saline lock maintenance • Basiliximab IV
Activity/Rest and/or ADLs	<ul style="list-style-type: none"> • Ambulate independently • Wash independently • Encourage deep breathing and coughing
Pain	<ul style="list-style-type: none"> • Reports comfort level • Pain assessment q4h
Nutrition	<ul style="list-style-type: none"> • Regular diet • Diet progress as ordered (KPTx)
Elimination	<ul style="list-style-type: none"> • Foley catheter discontinued • Urine output adequate • Bowel protocol prn
Anxiety/Fear	<ul style="list-style-type: none"> • Team supports patient/family to explore feelings and issues of outcome of surgery and fear of diagnosis
Consults/Other	<ul style="list-style-type: none"> • Pharmacy • Home Care • Social Worker

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	<ul style="list-style-type: none"> • Diabetic RN teaching (if applicable)
Desired Outcomes	<ul style="list-style-type: none"> • Patient & family verbalize understanding of rejection and importance of medication compliance • Home support in place • Adequate oxygenation • Breath sounds clear • Blood work within acceptable limits • Maintain BS level between 3.3-6.4mmol/L • Hemodynamically stable • Afebrile • C&S Protocol • Adequate pain control • Mobilizing independently • Tolerating diet • Adequate urine output q6hours • Normal BM • Wound healing • Adequate sleep/rest

Post-Op Day 5 and Onward	
Categories/ Focus/ Care	Expected Outcomes
Discharge Planning/Teaching	<ul style="list-style-type: none"> Reinforce S&S rejection and infection Update 'My discharge plan' with: <ul style="list-style-type: none"> date of first clinic appointment in SOT clinic date of stent removal in urology clinic Medication teaching done by transplant pharmacist Non-immunosuppression prescription given to patient/family (fax to home pharmacy if applicable) Brown bag of immunosuppression given to patient/family Fax updated medication summary sheet to SOT clinic (604-875-4781) Patient self administers meds Patient monitors own I/O
Tests	<ul style="list-style-type: none"> CBC, and diff Lytes, BUN, & Creat, Fasting blood glucose Ca, PO4, Mg Serum Amylase (KPTx) Additional blood work (Mon & Thur) Urine C&S Mon & Thurs (KPTx) Tacrolimus Level (trough level before am dose) Cyclosporine Level (trough level before am dose)
Treatments/ Assessments	<ul style="list-style-type: none"> Nursing assessment Room air Pulse oximetry q shift Vital signs BID Blood Glucose QID (KPTx) Weight before breakfast Assess or d/c central line, if appropriate Maintain or D/C saline lock Dextran 40 in N/S over 24 hours q2d (last dose POD5)
Activity/Rest and/or ADLs	<ul style="list-style-type: none"> Ambulate independently Wash independently Encourage deep breathing and coughing
Pain	<ul style="list-style-type: none"> Reports comfort level Pain assessment q4h
Nutrition	<ul style="list-style-type: none"> Regular diet Diet progress as ordered (KPTx)
Elimination	<ul style="list-style-type: none"> Urine output adequate Bowel protocol prn
Anxiety/Fear	<ul style="list-style-type: none"> Team supports patient/family to explore feelings and issues of outcome of surgery and fear of diagnosis

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Consults/Other	<ul style="list-style-type: none"> • Pharmacy • Endocrine
Desired Outcomes	<ul style="list-style-type: none"> • Patient & family verbalize understanding of rejection, infection, and importance of medication compliance • Home support in place • Adequate oxygenation • Blood work within acceptable limits • Maintain BS level between 3.3-6.4mmol/L Hemodynamically stable • Afebrile • C&S Protocol • Adequate pain control • Mobilizing • Tolerating diet • Normal BM • Wound healing • Adequate sleep/rest

Developed By

Effective Date:	
Posted Date:	
Last Revised:	
Last Reviewed:	
Approved By:	
	Endorsed By:
	Final Sign Off:
Owners:	VCH
	Developer Lead(s):
	<ul style="list-style-type: none"> Clinical Nurse Educator, Transplant, Urology, Gynecology, Plastics, VGH

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