Pajares-Cuadrado D, et al. htpps://doi.org/10.37551/S2254-28842025017

Nursing care plan for a psychologically complex patient undergoing pancreas-kidney transplant

Diana Pajares-Cuadrado[1], Teresa Vicente-García[1], María Luz Sánchez-Tocino[1,2,3*]

[1] Departamento de Enfermería y Fisioterapia. Área Enfermería. Universidad de Salamanca. Spain
[2] Instituto de Investigación Biomédica de Salamanca (IBSAL). Spain
[3] Fundación Renal Española. Salamanca. Spain

Please cite this article in press as:
Pajares-Cuadrado D, Vicente-García T, Sánchez-Tocino ML. Plan de cuidados de enfermería en paciente psicológicamente complejo sometido a trasplante páncreas-riñón. Enferm Nefrol. 2025;28(2):144-53

Corresponding author:
María Luz Sánchez Tocino
mlsancheztocino@usal.es

Reception: 12-12-24
Acceptance: 12-03-25
Publication: 30-06-25

ABSTRACT

Case Description: A 35-year-old male, diabetic Type I since age 11, developed Stage 5 chronic kidney disease secondary to diabetic nephropathy. He has been undergoing haemodialysis since March 2023. In August 2023, he was offered the possibility of undergoing a pancreas-kidney transplant, which was performed in February 2024.
From a psychological perspective, the patient has a past medical history of previous voluntary discharge requests and, during hospitalisation, shows resistance to remaining admitted, which poses a risk to graft viability and postoperative evolution.

Care Plan Description: The nursing care plan was implemented in the Intensive Care Unit during the immediate postoperative period. An assessment of the patient's altered needs was performed following Virginia Henderson's 14 Needs model, identifying the diagnosis of ineffective health maintenance behaviours as a priority.

Plan Evaluation: Upon hospital discharge, the proposed care plan was evaluated. Throughout the hospitalisation, the altered patterns were resolved, preventing premature voluntary discharge, which ensured his clinical stability.

Conclusion: A care plan based on health education, psychological support, and interdisciplinary collaboration can be key to improving therapeutic adherence and clinical evolution in transplanted patients with difficulties in health maintenance. This case reinforces the need for personalised nursing strategies to ensure treatment continuity and optimise long-term outcomes.

Keywords: pancreas-kidney transplant; chronic kidney disease; diabetes mellitus; diabetic nephropathy; intensive care unit; nursing care plan.

RESUMEN

Plan de cuidados de enfermería en paciente psicológicamente complejosometido a trasplante-páncreas-riñón

Descripción del caso: Varón de 35 años, diabético tipo I desde los 11, desarrolla una enfermedad renal crónica en estadio 5 secundaria a nefropatía diabética. En tratamiento con hemodiálisis desde marzo de 2023.
En agosto de 2023 se le propone la posibilidad de someterse a un trasplante páncreas-riñón, realizándose en febrero de 2024.
Desde el punto de vista psicológico, el paciente presenta antecedentes de solicitudes de alta voluntaria previas y, durante la hospitalización, muestra resistencia a permanecer ingresado, lo que supone un riesgo para la viabilidad del injerto y su evolución postoperatoria.

Descripción del plan de cuidados: El plan de cuidados de enfermería se implementó en la Unidad de Cuidados Intensivos, durante el postoperatorio inmediato. Se realizó una valoración de las necesidades alteradas del paciente siguiendo el modelo de 14 Necesidades de Virginia Henderson, identificando como prioritario el diagnóstico de conductas ineficaces de mantenimiento de la salud.

Evaluación del plan: Al alta hospitalaria, se realizó la evaluación del plan de cuidados propuesto. A lo largo de la hospitalización, se solventaron los patrones alterados, previniendo el alta voluntaria prematura, lo que garantizó su estabilidad clínica.

Conclusión: Un plan de cuidados basado en la educación sanitaria, el apoyo psicológico y la colaboración interdisciplinar puede ser clave para mejorar la adherencia terapéutica y la evolución clínica en pacientes trasplantados con dificultades en el mantenimiento de la salud. Este caso refuerza la necesidad de estrategias personalizadas de enfermería para garantizar la continuidad del tratamiento y optimizar los resultados a largo plazo.

Palabras clave: trasplante páncreas-riñón; enfermedad renal crónica; diabetes mellitus; nefropatía diabética; unidad de cuidados intensivos; plan de cuidados de enfermería.

INTRODUCTION

Pancreas-kidney transplantation (PKT) is a surgical procedure that involves implanting a pancreas (from a deceased donor) and a kidney (from a living or deceased donor) simultaneously or subsequent to a prior kidney transplant in a patient with no obvious pancreatic damage, but with difficult-to-control diabetes mellitus (DM) and secondary nephropathy[1].

Initially, PKT was considered the treatment of choice for patients with T1DM and chronic kidney disease (CKD); however, it has now been suggested that some T2DM patients younger than 50 years, with a body mass index (BMI) < 30 kg/m2 and insulin-dependent, could also benefit from this transplant[2].

Diabetic nephropathy is one of the microangiopathic complications of DM. Renal replacement therapy is an option; however, the survival of diabetic patients on dialysis is lower than that of non-diabetic patients, primarily due to an increased risk of cardiovascular mortality and infections arising from DM complications[3].

Therefore, PKT is currently the best therapeutic option for diabetic patients with chronic kidney disease, despite the potential complications that may arise from undergoing this double surgical procedure[4].

The first PKT was performed in December 1966 at the University of Minnesota on a diabetic patient undergoing dialysis, resulting in the function of both organs. Since then, it is estimated that over 50,000 diabetic patients have received transplants in more than 200 centres worldwide. Currently, PKT is the most frequent modality among pancreas transplants, representing 75% to 80% of pancreatic transplants performed globally[5].

In Spain, the first PKT was performed 34 years ago in Barcelona. Today, reviewing data from the National Transplant Organisation (ONT), we can see that Spain, in recent years, the number of pancreas transplants is approximately 90 transplants per year, with PKT being the most common modality[5].

In Castile and León, the only authorised centre for this type of transplant is CAUSA, and in the last year (2023), a total of 5 PKTs were performed out of the 86 carried out across Spain[6].

PKT is primarily indicated for T1DM patients with CKD on dialysis or pre-dialysis; however, in recent years, patients with T2DM who meet the necessary requirements have also been included. Furthermore, the age limit criterion has been extended, yielding good results. Despite this, the number of patients undergoing PKT remains low, not exceeding 7.7%[7].

A fundamental objective for increasing the probability of PKT success is meticulous patient selection, such that, among other things, secondary lesions due to diabetes are still reversible[3].

In addition to clinical criteria, it is essential to assess patient adherence to immunosuppressive treatment, as graft rejection remains one of the main causes of transplant loss. Lack of therapeutic compliance, often related to psychological and social factors, can compromise the survival of both the graft and the patient. Therefore, adequate mental health and effective emotional support are key aspects in the selection and follow-up of PKT candidates[8].

CASE REPORT

A 35-year-old man was admitted to the Intensive Care Unit (ICU) after undergoing surgery for a PKT. Diagnosed with T1DM since the age of 11, he developed Stage 5 CKD due to diabetic nephropathy due to poorly controlled DM.

He had on haemodialysis since March 2023, 2 times a week (Mondays, Wednesdays, and Fridays) for four hours daily. He had a double-lumen central venous catheter inserted in the right subclavian vein, through which he received dialysis; previously, he had a native arteriovenous fistula that was now occluded.

In August 2023, he was offered the possibility of undergoing a PKT. He accepted and was placed on the waiting list for this procedure. In September of the same year, he was called as a

reserve, but the transplant was not performed until February 2024, when he received another call.

From a psychological perspective, he experienced episodes of anxiety and nervousness, but reported never having been assessed by psychiatry or undergoing any psychiatric treatment. During his ICU admission, he was very agitated, leading to a psychiatric consultation, which resulted in the prescribing of medication.

The patient had a significant history of requesting voluntary discharge against medical advice, and this also occurred at the beginning of his recovery, despite being in the ICU. In this instance, however, the healthcare team refused to grant it due to the life-threatening risk it would entail.

Finally, after five days in the ICU, he was discharged to the transplant unit's inpatient ward.

Ethical Considerations:
For the handling of all confidential patient information, prior approval was obtained from the Research Ethics Committee for Medicinal Products (CEIm; PI2024 02 1525-TFG); subsequently, access to the patient's medical record was requested from Salamanca Hospital. Finally, the patient's informed consent was obtained, both verbally and in writing.

NURSING ASSESSMENT ACCORDING TO VIRGINIA HENDERSON'S 14 NEEDS MODEL

Need 1: Normal Breathing
In the immediate postoperative period, the patient remained intubated and connected to invasive mechanical ventilation; he was extubated four hours later. He presented no serious respiratory complications, although he required oxygen therapy with a Ventimask, which was progressively weaned as tolerated.

Nursing staff closely monitored the patient's respiratory status, collaborating in the early detection of signs of deterioration and in the implementation of preventive measures to optimise pulmonary function. A collaborative problem related to the risk of respiratory insufficiency was identified, for which action was taken in coordination with the medical team.

Additionally, he experienced pain during coughing episodes, leading to ineffective secretion clearance, requiring nursing interventions such as pain control and support with lung expansion techniques to promote ventilation and prevent complications.

Need 2: Eating and Drinking
The patient had a nasogastric tube on gravity drainage with bilious content during the initial hours.

He was to remain nil by mouth with intravenous fluids until evolution was assessed. The day after the intervention, oral fluid intake began with significant restriction, and three days later, enteral nutrition at 80 mL/h, which was well tolerated. Regarding blood glucose levels, he initially presented with elevated readings, so a continuous insulin infusion was initiated according to the unit's protocol[9].

Need 3: Elimination
The patient was carrier of an 18-Fr Foley catheter with 3 lumens, and significant haematuria was observed. Regarding bowel movements, he had two with difficulty during his ICU stay.

Need 4: Movement
During the first 24 hours post-intervention, the patient was to maintain complete bed rest; thereafter, mobilisation was limited to transfer from bed to chair twice a day for a minimum of 4 consecutive hours each time.

Need 5: Rest/Sleep
This need was not altered.

Need 6: Dressing/Undressing
Not assessable, as the patient in the ICU remained undressed.

Need 7: Temperature
The patient had continuous monitoring of skin temperature. At 48 hours post-intervention, a febrile episode was objectively noted, likely associated with pancreatitis.

Nursing staff closely monitored the patient's thermal evolution, promptly identifying signs of complication and applying non-pharmacological measures for thermal comfort. Fever was considered a collaborative problem, in which nursing acted in coordination with the medical team for its diagnosis and treatment.

Need 8: Hygiene/Skin
Not assessable, as hygiene was performed in bed by healthcare staff.

Need 9: Avoiding Dangers/Safety
As a result of the immunosuppression induced in the patient to prevent PKT rejection, there was a high risk of infection. Additionally, he had surgical wounds and 2 Jackson-Pratt drains with bulbs on suction; the right one was pancreatic with a larger volume of content, and the left one was renal with less content but more haematous.

With substantially reduced mobility, there was also a risk of thrombus formation.

Finally, the patient had a significant history of voluntary discharges; in this case, he also wished to take a discharge vs medical advice, which posed a great risk to his life.

Need 10: Communication
The patient presented no alteration of this need.

Need 11: Beliefs/Values
No alteration of this need was observed.

Pajares-Cuadrado D, et al. htpps://doi.org/10.37551/S2254-28842025017

Need 12: Working/Accomplishing
This need was altered. The patient required bed rest following his surgical intervention.

Need 13: Recreation
Not assessable in the context of an ICU hospitalisation.

Need 14: Learning
A lack of patient knowledge about his health status was observed, reflected in his persistent insistence on obtaining a voluntary discharge.

NURSING CARE PLAN

The individualised nursing care plan, implemented during the patient's ICU admission, is described below, following the NANDA diagnostic taxonomy and its corresponding Nursing Outcomes Classification (NOC) and Nursing Interventions Classification (NIC) results. The NNNConsult electronic tool[10] was used for this purpose.

Table 1. Nursing Care Plan for Identified Nursing Diagnoses/Collaborative Problems.

NANDA: INEFFECTIVE BREATHING PATTERN [00032]	
NOC	**Indicators**
Respiratory status: ventilation [0403]	- Resting dyspnea [40313] - Sputum accumulation [40331]
NIC	**Activities**
Respiratory monitoring [3350]	- Monitor respiratory rate, rhythm, depth, and effort. - Assess chest symmetry and use of accessory muscles. - Evaluate abnormal breathing patterns and sounds. - Continuously monitor oxygen levels via pulse oximetry. - Report any signs of respiratory deterioration to the medical team for evaluation and treatment.
Oxygen therapy [3320]	- Administer supplemental oxygen with the appropriate device as prescribed by the physician. - Collaborate with the medical team to adjust oxygen flow based on pulse oximetry and/or arterial blood gases.
Chest physiotherapy [3230]	- Teach the patient to perform breathing exercises with an incentive spirometer as soon as tolerated after surgery. - Monitor patient tolerance during and after the procedure using pulse oximetry. - Facilitate secretion mobilization through postural changes and non-invasive techniques.
Acid-base balance monitoring [1920]	- Obtain arterial blood gases for acid-base balance analysis. - Assist in interpreting arterial blood gas values in coordination with the medical team. - Compare the current state with previous results to detect patient status changes.
NANDA: IMPAIRED SWALLOWING [00103]	
NOC	**Indicators**
Swallowing status [1010]	- Gastric reflux [101014]
Enteral feeding through tube [1056]	- Change the nasal tube anchoring dressing every 24 hours and adjust the tube support point on the nose. - Check the insertion depth (cm) of the tube at the nostril. - Elevate the head of the bed 30 to 45° during feeding. - Verify the correct infusion rate of the feeding pump. - Pause feeding and flush the tube every 4–6 hours during continuous feeding. - Before resuming feeding, use gravity for one hour to check for gastric residuals. - Monitor proper hydration and electrolyte levels.
NANDA: RISK FOR UNSTABLE BLOOD GLUCOSE LEVEL [00179]	
NIC	**Activities**
Blood glucose level [2300]	- Blood glucose concentration [230001]

NIC	Activities
Hypoglycemia Management [2130]	- Identify signs and symptoms of hypoglycemia. - Routinely monitor blood glucose. - Review events prior to hypoglycemia to determine the possible cause. - Administer continuous infusion of 5% dextrose solution and adjust the rate according to the patient's blood glucose.
Medication Administration: Intradermal [2312] (and intravenous in critical care)	- Follow the "five rights" rule for medication administration. - Check drug expiration dates. - Follow the protocol guidelines of the unit. - Correctly prepare the dose and dilution for continuous infusion. - Document the administration.
NANDA: IMPAIRED URINARY ELIMINATION [00016]	
NOC	**Indicators**
Renal function [0504]	- Hematuria [50414]
Urinary elimination [0503]	- Visible blood in urine [50329]
NIC	**Activities**
Urinary catheter care [1876]	- Change the Foley catheter every 30 days. - Use sterile technique for catheter insertion. - Ensure the drainage bag remains unclamped and below bladder level. - Empty the urine bag before it becomes completely full. - Carefully record and monitor the appearance of urine every hour. - Perform daily genital hygiene with water and soap.
NANDA: IMPAIRED PHYSICAL MOBILITY [00085]	
NOC	**Indicators**
Body position: self-initiated [0203]	- Moves from prone to supine [20301] - Moves from lying to sitting [20302]
Transfer performance [0210]	- Transfer from bed to chair [21001] - Transfer from chair to bed [21002]
NIC	**Activities**
Self-care assistance [1800]	- Provide help until the patient is fully able to perform self-care independently.
Self-care assistance [1806]	- Select transfer techniques appropriate for the patient. - Identify methods to avoid injury during transfer. - Assist the patient to walk, using the caregiver's body as a human crutch if necessary.
Bedridden patient care [740]	- Explain the reasons for bed rest. - Position the patient with proper body alignment. - Keep bed linens clean, dry, and wrinkle-free. - Raise bed rails as appropriate. - Monitor skin condition. - Facilitate small changes in body posture. - Perform hygiene in bed.
NANDA: IMPAIRED PHYSICAL MOBILITY [00085]	
NOC	**Indicadores**
Thermoregulation [0800]	- Increased skin temperature [80001] - Hyperthermia [80019]
NIC	**Activities**
Temperature Regulation [3900]	- Establish a continuous temperature monitoring device. - Monitor skin temperature and colour. - Observe and record signs of shivering, sweating, and other symptoms associated with fever.

	- Notify the medical team of the presence of fever for etiological evaluation and treatment. - Apply physical thermal comfort measures, such as cold compresses or changing bed linens, according to patient tolerance. - Administer antipyretics as prescribed and assess their effectiveness.
NANDA: RISK FOR INFECTION [00004]	
NOC	**Indicators**
Risk Control [1902]	- Recognizes personal risk factors [190201] - Controls environmental risk factors [190202] - Develops effective risk control strategies [190204]
Immune Status [0702]	- Skin integrity [70208] - Antibody titers [70212] - Absolute leukocyte count [70214]
NIC	**Activities**
Protection Against Infections [6550]	- Follow precautions for immunocompromised patients. - Limit the number of visitors and ensure handwashing upon entering and leaving the patient's room using appropriate antimicrobial soap. - Ensure aseptic handling of all intravenous lines. - Administer prescribed antibiotic treatment.
Wound Care [3660]	- Monitor wound characteristics during each dressing change. - Monitor the quantity and type of drainage from each drain. - Perform aseptic wound care every 24 hours or as needed. - Clean with normal saline and use appropriate materials based on wound status and evolution. - Change dressings during each care session and according to exudate amount. - Document wound location, size, and appearance.
NANDA: RISK FOR THROMBOSIS [00291]	
NOC	**Indicators**
Risk Control: Thrombi [1932]	- Avoid sitting for long periods [193216]
NIC	**Activities**
Embolism Precautions [4110]	- Use compression stockings and administer low molecular weight heparin subcutaneously every 24 hours. - Perform thorough and routine assessment of lower limbs. - Recommend frequent foot and leg exercises. - Encourage early mobilization or ambulation, as tolerated.
NANDA: INEFFECTIVE HEALTH MAINTENANCE BEHAVIORS [00292]	
NOC	**Indicators**
Health Promotion Behavior [1602]	- Uses behaviors to avoid risks [160201] - Supervises risks of personal behavior [160203] - Uses effective stress reduction techniques [160205]
NIC	**Activities**
Counseling [5240]	- Establish a therapeutic relationship based on trust and respect. - Provide objective information as needed and appropriate. - Practice reflection and clarification techniques to facilitate the expression of concerns. - Discourage decision-making when the patient is under significant stress.
Behavior Modification [4360]	- Determine the patient's motivation for behavior change. - Reinforce constructive decisions regarding health needs. - Encourage the patient to examine their own behavior. - Facilitate family involvement in the behavior modification process.

Pajares-Cuadrado D, et al. htpps://doi.org/10.37551/S2254-28842025017

NANDA: DEFICIENT KNOWLEDGE [00126]	
NOC	**Indicators**
Knowledge: therapeutic regimen [1813]	- Benefits of treatment [181301] - Self-care responsibilities for ongoing treatment [181302] - Disease process [181310]
Motivation [1209]	- Develops an action plan [120902] - Initiates goal-directed behaviors [120905] - Maintains positive self-esteem [120907]
NIC	**Activities**
Teaching: disease process [5602]	- Assess the patient's level of knowledge regarding the intervention and postoperative process. - Provide the necessary information. - Provide reassurance regarding the patient's condition.
Teaching: procedure/treatment [5618]	- Reinforce the patient's trust in the healthcare staff involved. - Explain the purpose of the treatment. - Inform the patient about how they can contribute to their recovery. - Give the patient time to ask questions and express concerns.

Table 2. Evaluation of the Care Plan.

	EVALUACIÓN DEL PLAN DE CUIDADOS				
NANDA Nursing Diagnosis	**NOC Outcome**	**INDICATORS**	**EVALUATION SCALE**	**INITIAL SCORE**	**FINAL SCORE**
Ineffective Breathing Pattern [00032]	Respiratory Status: Ventilation [0403]	Dyspnoea at rest [40313]	Scale 14	2	5
		Sputum accumulation [40331]	Scale 14	3	4
Impaired Swallowing [00103]	Swallowing Status [1010]	Gastric reflux [101014]	Scale 14	1	5
Risk for Unstable Blood Glucose Level [00179]	Blood Glucose Level [2300]	Blood glucose concentration [230001]	Scale 2	2	4
Impaired Urinary Elimination [00016]	Renal Function [0504]	Hematuria [50414]	Scale 14	2	5
	Urinary Elimination [0503]	Visible blood in urine [50329]	Scale 1	2	5
Impaired Physical Mobility [00085]	Body Position: Self-Initiated [0203]	Moves from prone to supine [20301]	Scale 1	2	4
		Transfers from chair to bed [21002]	Scale 1	1	4
	Transfer Performance [0210]	Moves from lying to sitting [21001]	Scale 1	1	3
		Transfer from sitting to bed [21002]	Scale 1	2	4
Hyperthermia [00007]	Thermoregulation [0800]	Increased skin temperature [80001]	Scale 14	2	5
		Hyperthermia [80019]	Scale 14	2	5

Risk for Infection [00004]	Risk Control [1902]	Recognises personal risk factors [190201]	Scale 13	2	3
		Recognises environmental risk factors [190202]	Scale 13	2	3
		Develops effective risk control strategies [190204]	Scale 13	2	3
	Immune Status [0702]	Skin integrity [70208]	Scale 1	2	4
		Antibody titer [70208]	Scale 1	1	1
		Absolute leukocyte count [70214]	Scale 1	1	1
Risk for Thrombosis [00291]	Thrombus Risk Control [1932]	Avoids sitting for long periods [193216]	Scale 13	1	1
Ineffective Health Maintenance Behaviours [00292]	Health Promoting Behaviour [1602]	Uses behaviours to avoid risks [160201]	Scale 13	1	3
		Supervises risks of personal bevahiour [160203]	Scale 13	1	3
		Uses effective techniques to reduce stress [160205]	Scale 13	1	2
Deficient Knowledge [0012]	Knowledge: Therapeutic Regimen [181]	Benefits of treatment [181301]	Scale 20	2	3
		Self-carer esponsibilities for ongoing treatment [181302]	Scale 20	2	3
		Disease process [181310]	Scale 20	2	3
	Motivation [1209]	Develops an action plan [120902]	Scale 1	2	4
		Initiates goal-directed behaviours [120905]	Scale 1	1	1
		Develops positive self-esteem [120907]	Scale 1	1	1

DISCUSSION

Chronic kidney disease (CKD) is one of the most serious complications that can develop in individuals with diabetes mellitus (DM), and once at advanced stages, pancreas-kidney transplantation (PKT) is considered the best therapeutic option to improve quality of life and reduce mortality[1]. However, transplant success depends not only on the surgical procedure but also on rigorous postoperative follow-up and patient adherence to immunosuppressive treatment[11].

In the presented case, the patient was admitted to the ICU with multiple altered needs, both clinically and psychologically[12]. While his haemodynamic stability and physical improvement were achieved through close monitoring and specific care, his initial refusal to be admitted and his lack of awareness regarding the importance of post-surgical treatment posed a significant challenge for the nursing team.

Nursing staff implemented a care plan based on a comprehensive assessment of his needs, addressing not only physiological alterations but also psychosocial factors that could interfere with his recovery. Counselling and behaviour modification strategies were applied with the aim of improving his adherence to treatment and minimising the risk of premature hospital discharge. Health education and emotional support played a fundamental role in this process, enabling the patient to gain a greater awareness of his situation and the necessity of continuing with hospital care[13].

Former studies have shown that transplant patients with difficulties in maintaining health face a higher risk of post-surgical complications and graft loss due to a lack of therapeutic adherence[14]. Nursing intervention, through a trust-based approach and clarification of doubts, has proven effective in modifying attitudes of refusal and fostering responsible decision-making in the recovery process[15].

CONCLUSIONS

The appropriate identification of the patient's needs and the application of an individualised care plan yielded favourable results in his clinical evolution. The combination of close monitoring, an interdisciplinary approach, and effective psychological support were key to achieving patient stability, reducing anxiety, and improving his commitment to treatment. This case reinforces the relevance of the nursing role in the postoperative care of transplant patients, highlighting its impact not only on clinical control but also on adaptation to the new situation, reducing anxiety and promoting self-care behaviours that ensure long-term graft survival.

Conflicts of interest

The authors declared no conflict of interest whatsoever.

Funding

The authors declare that they have not received any funding.

REFERENCES

1. García-Cosmes P. Trasplante de páncreas riñón ¿La solución? Diál traspl [Internet]. 2011 [cited 10 Jan 2024]; 32(Supl 4):S162. Available at: https://www.elsevier.es/es-revista-dialisis-trasplante-275-articulo-trasplante-pancreas-rinon-la-S1886284511002517

2. Esmatjes Mompó E, Ricart Brulles M.J. Diabetes y trasplante de páncreas. Nutr. Hosp [Internet]. 2008 [cited 10 Jan 2024];23(Supl 2):S64-70. Available at: d=S0212-16112008000600010&lng=es

3. Gómez-Huelgas R, Martínez-Castelao A, Artola S., Górriz José L, Menéndez E. Documento de Consenso sobre el tratamiento de la diabetes tipo 2 en el paciente con enfermedad renal crónica. Nefrología (Madrid) [Internet]. 2014 [cited 10 Jan 2024];34(Supl 1):S34-45. Available at: d=S0211-69952014000100005&lng=es

4. Ventura-Aguiar P, Ruiz JC, Sequeira P, Domínguez-Gil B; en nombre del Grupo Español de Estudio del Trasplante de Páncreas. Kidney-pancreas transplantation An excellent treatment alternative for the patient with insulin-dependent diabetes and advanced chronic kidney disease. Nefrologia (Engl Ed). [Internet]. 2023 [cited 10 Jan 2024];43(Suppl 4):383-5. Available at: https://www.revistanefrologia.com/es-trasplante-renopancreatico-una-excelente-alternativa-articulo-S0211699522001187

5. Casanova D; en nombre de Grupo Español de Trasplante de Páncreas. Pancreas transplantation: 50 years of experience. Cir Esp [Internet]. 2017 [cited 19 Jan 2024]; 95(Suppl 5):254-60. Available at: https://www.elsevier. es/es-revista-cirugia-espanola-36-articulo-trasplante-pancreas-50-anos-experiencia-S0009739X1730043X

6. Ucio Mingo P, Palencia García Mª A, García Relanzón S, Sevilla Casas S, Servicio de Estudios, Documentación y Estadística. Memoria de donación y trasplantes de Castilla y León [Internet]. 2023 [cited 22 Jan 2024]. Available at: https://www.saludcastillayleon.es/transparencia/es/transparencia/sanidad-cifras/memorias/memorias-donaciones-trasplantes.ficheros/2682177-Memoria%20de%20donaciones%20y%20trasplantes%202023.pdf

7. Zehnder B. C. Trasplante de páncreas tipos, selección de receptores y donantes. Rev médica Clín Las Condes [Internet]. 2010 [cited 25 Jan 2024];21(Suppl 2): 214-7. Available at: http://dx.doi.org/10.1016/s0716-8640(10)70527-7

8. Rojas O, Krauskopf V, Umaña JA, Erazo R. Intervención psiquiátrica en programa de trasplantes. Revista Médica Clínica Las Condes. 2010;21(2):286-92. https://doi.org/10.1016/ S0716-8640(10)70536-8

9. Herramienta online para la consulta y diseño de Planes de Cuidados de Enfermería. NNNConsult. Elsevier [Internet]. 2015 [cited 7 Mar 2024]. Available at: http://www. nnnconsult.com/.

10. Albalá Martínez N, Martín Álvarez E, Belda Hernández A. Protocolo de cuidados al paciente con trasplante pancreático-renal en la UCI. Servicio de Medicina Interna. Complejo Asistencial Universitario de Salamanca. PTC-MIV-GE 21-0101

11. Argüeso-Gómez Laura, Rodrigo-Calabia Emilio, Pelayo-Alonso Raquel, de Cos-Cossío Mª Ángeles. Adherencia al tratamiento en pacientes con trasplante renal y su relación con los niveles plasmáticos de inmunosupresores. Enferm Nefrol [Internet]. 2023 [cited 30 Jan 2025];26(4): 344-50. Available at: cript=sci_arttext&pid=S2254-28842023000400006&lng=es

12. Ibáñez López C, Méndez Méndez MD, Concha V, Pereira Lestayo MI. Aspectos psicosociales en pacientes candidatos a trasplante de órganos. Duazary: Revista internacional de Ciencias de la Salud. 2021;18(1):20-31.

13. Pueyo-Garrigues M, San Martín Loyola Á, Caparrós Leal MC, Jiménez Muñoz C. Educación para la salud en el paciente trasplantado y su familia en una unidad de cuidados intensivos. Enfermería Intensiva. 2016;27(1):31-9.

14. Ruiz Calzado María Rocío. La adherencia terapéutica en el paciente trasplantado renal. Enferm Nefrol [Internet]. 2013 [cited 30 Jan 2025];16(4):258-70. Available at: d=S2254-28842013000400007&lng=es

15. Pisano González MM, González Pisano A. La modificación de los hábitos y la adherencia terapéutica, clave para el control de la enfermedad crónica. Enfermería Clínica. 2023;33(2):123-30.