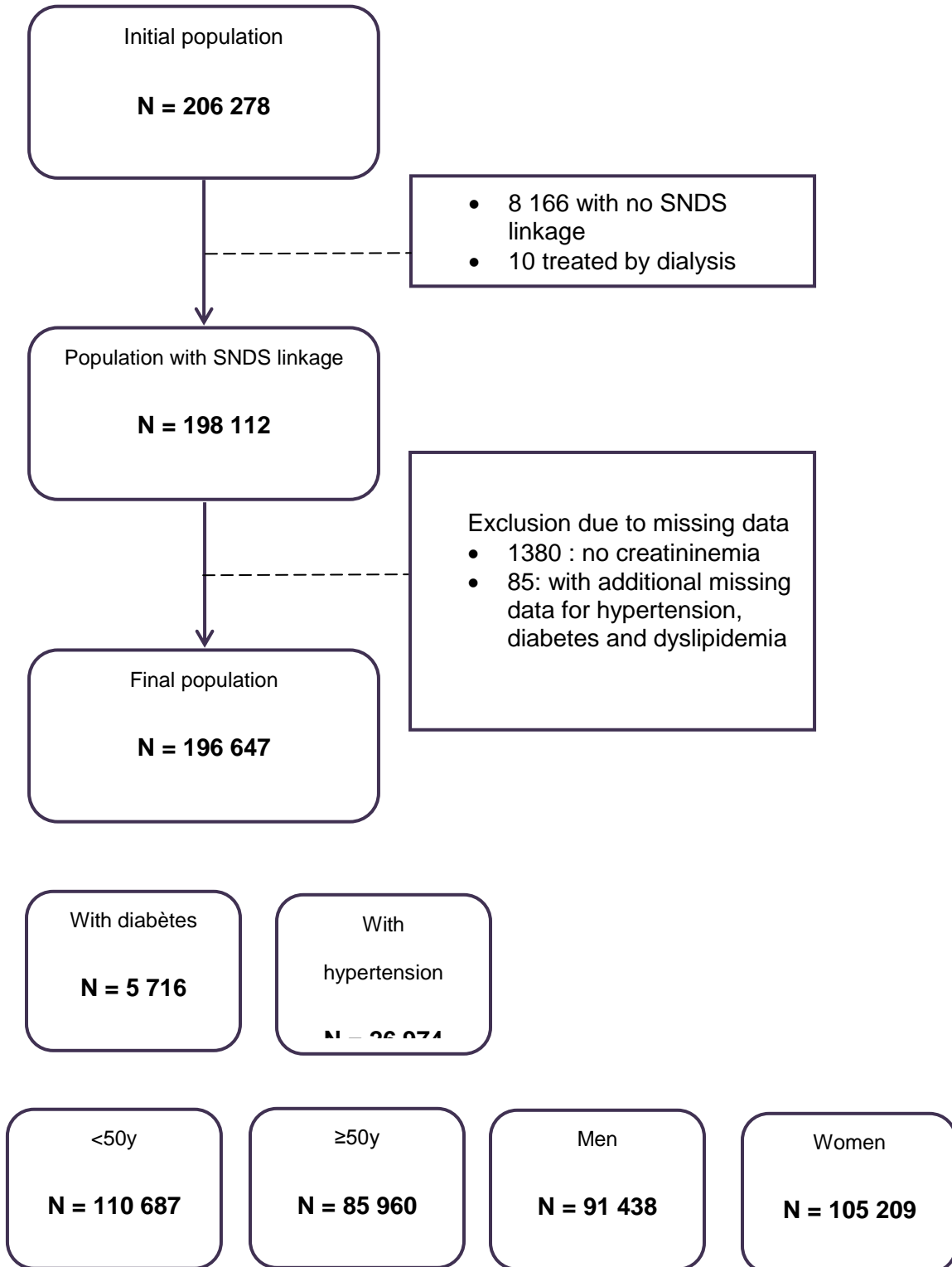


SUPPLEMENTARY DATA

Supplementary Figure1: Flow chart



Supplementary table 1: eGFR distribution between first (inclusion) and second measure of serum creatinine and characteristics of the CONSTANCES cohort patients according to number of eGFR measures

		eGFR at follow up (% population)				Total
		<60	60-74	75-89	≥90	
eGFR at inclusion (% population)	<60	389 (0,68)	223 (0,39)	34 (0,06)	9 (0,02)	655 (1,14)
	60-74	627 (1,09)	3097 (5,4)	1550 (2,7)	171 (0,3)	5445 (9,5)
	75-89	178 (0,31)	3560 (6,21)	9284 (16,2)	3189 (5,56)	16211 (28,29)
	≥90	31 (0,05)	573 (1)	7800 (13,61)	26593 (46,4)	34997 (61,07)
Total		1225 (2,14)	7453 (13,01)	18668 (32,57)	29962 (52,28)	57308 (100)

	At least one measure	Two measures
N	196 647	57 308
Age, mean (Sdt)	47.2 (13.5)	49.1 (12.8)
%Men	46.50	48.62
% with hypertension	30.52	29.86
% with diabetes	4.04	3.09
% with dyslipidaemia	32.02	31.18
eGFR (ml/min/1.73m²)		
Q1	85.4	83.7
Median	95.7	93.9
Q3	106.3	103.7
% eGFR <90 (inclusion)	34.8	38.9
% eGFR <60 (inclusion)	1.1	1.1
% eGFR <45 (inclusion)	0.13	0.07
% eGFR <30 (inclusion)	0.03	0.01

Supplementary Table 2 Performance of the algorithm according to the level of eGFR among volunteers with two serum creatinine measures (n= 57 308).

	eGFR CONSTANCES cohort	
Algorithm	eGFR<60	eGFR≥60
CKD +	TP = 78 (0.14%)	FP=2 019 (3.52%)
CKD -	FN=311 (0.54%)	TN = 54 900 (95.8%)

TP : true positive, FN : false negative, FP : false positive, TN : true negative

Se	Sp	PPV	NPV	LR+	LR-	Accuracy	Cohen's kappa coefficient
20.1%	96.5%	3.7%	99.1%	5.74	0.83	99.4%	5.2% (3.9-6.5%)

Se : sensitivity, Sp : specificity, PPV : positive predictive value, NPV: negative predictive value,

Supplementary Table 3: Assignment status among volunteers with two serum creatinine measurements and testing for albuminuria or proteinuria (n= 14 579)

	eGFR CONSTANCES cohort	
Algorithm	2 measures of eGFR<60 and/or ACR > 30mg/mmol or proteinuria >0.5 g/L	eGFR≥60 without albuminuria or proteinuria
CKD +	TP = 18 (0.12%)	FP=748 (5.13%)
CKD -	FN=10 (0.07%)	TN = 13 803 (94.7%)

TP : true positive, FN : false negative, FP : false positive, TN : true negative

Due to small numbers, performance test should be considered carefully

Se	Sp	PPV	NPV	LR+	LR-	Accuracy	Cohen's kappa coefficient
64,3%	94,8%	2,3%	99.9%	12.37	0.38	94.8%	4.2% (2.2-6.1%)

Se : sensitivity, Sp : specificity, PPV : positive predictive value, NPV: negative predictive value,

Supplementary Table 4: Characteristics of the CONSTANCES cohort patients according to their classification with the RENALGO-EXPERT algorithm among subpopulations: 5716 volunteers with diabetes, 26974 with hypertension, 110687 <50y, 85960 ≥50y, 91438 men and 105209 women

		CKD CERTAIN	CKD LIKELY	NO CKD	Total
Diabetes	N	135	1106	4475	5716
	Age, mean (Sdt)	60.3 (8.7)	59.6 (9.4)	56.6 (10.9)	57.2 (10.67)
	% Male	65.2	59.8	58.6	59.0
	% with hypertension	94.1	80.9	66.1	69.6
	% with dyslipidemia	84.4	79.2	66.3	69.2
	eGFR_(ml/min/1.73m²)				
	Q1	49.8	77.4	82.4	80.8
	Median	73.1	90.5	92.4	91.8
	Q3	90.2	97.7	100.4	99.7
	% eGFR <90	74.1	48.4	42.1	44.1
	% eGFR <60	40.0	6.5	2.6	4.2
	% eGFR <45	20.0	2.2	0.3	1.1
	% eGFR <30	6.7	0.3	0.02	0.2
Hypertension	N	488	2627	23859	26974
	Age, mean (Sdt)	57.6 (11.0)	59.9 (9.3)	58.6 (9.6)	58.7 (9.6)
	% Male	60.0	53.8	53.6	53.8
	% with diabetes	27.7	31.9	12.4	14.6
	% with dyslipidemia	71.5	68.1	57.8	59.0
	eGFR_(ml/min/1.73m²)				
	Q1	47.5	73.9	77.5	76.9
	Median	68.6	87.5	88.3	88.1
	Q3	86.8	95.5	96.0	95.9
	% eGFR <90	78.7	56.5	55.2	55.7
	% eGFR <60	42.4	8.4	3.2	4.4
	% eGFR <45	22.1	2.2	0.3	0.8
	% eGFR <30	9.6	0.3	0.02	0.2
<50y	N	239	3 769	106 679	110 687
	Age, mean (Sdt)	38.9 (7.4)	36.0 (6.9)	37.1 (8.0)	37.1 (8.0)
	% Male	44.8	20.8	46.3	45.4
	% with hypertension	51.0	15.8	15.0	15.1
	% with diabetes	6.3	4.6	1.4	1.6
	% with dyslipidemia	39.3	26.5	20.1	20.3
	eGFR (ml/min/1.73m²)				
	Q1	73.0	94.4	93.5	93.5
	Median	93.1	107.1	104.1	104.1
	Q3	109.3	116.1	112.4	112.5
	% eGFR <90	44.8	18.6	18.4	18.5
	% eGFR <60	13.8	0.7	0.1	0.1
	% eGFR <45	8.8	0.1	0.00	0.02
% eGFR <30	4.18	0	0	0.01	

≥50y	N	551	4 256	81 153	85 960
	Age, mean (Sdt)	61.81 (5.6)	61.83 (5.6)	60.04 (5.7)	60.14 (5.8)
	% Male	59.0	51.0	47.7	47.9
	% with hypertension	79.8	69.2	49.2	50.4
	% with diabetes	24.7	24.7	6.2	7.2
	% with dyslipidaemia	66.8	61.5	46.2	47.1
	eGFR (ml/min/1.73m²)				
	Q1	50.6	74.9	78.4	78.1
	Median	71.8	86.6	88.2	88.1
	Q3	88.1	94.6	95.3	95.3
	% eGFR <90	78.2	58.6	55.5	55.8
	% eGFR <60	37.4	6.7	1.9	2.4
	% eGFR <45	18.2	1.5	0.01	0.3
% eGFR <30	7.1	0.2	0.01	0.1	
Men	N	432	2 958	88 048	91 438
	Age, mean (Sdt)	56.70 (11.1)	56.21 (11.6)	47.34 (13.3)	47.67 (13.4)
	% with hypertension	78.9	64.7	37.9	39.0
	% with diabetes	23.4	25.3	4.7	5.5
	% with dyslipidaemia	69.4	61.2	37.7	38.6
	eGFR (ml/min/1.73m²)				
	Q1	49.3	77.05	85.8	85.4
	Median	72.8	89.6	95.6	95.4
	Q3	91.2	98.2	105.9	105.7
	% eGFR <90	72.2	50.8	34.5	35.2
	% eGFR <60	37.3	5.8	0.8	1.2
	% eGFR <45	19.4	1.4	0.04	0.2
	% eGFR <30	8.3	0.2	0.0	0.05
Women	N	358	5 067	99 784	105 209
	Age, mean (Sdt)	52.7 (13.0)	45.9 (14.4)	46.7 (13.5)	46.7 (13.5)
	% with hypertension	61.7	32.1	22.6	23.2
	% with diabetes	14.0	9.4	2.4	2.8
	% with dyslipidaemia	45.2	35.7	25.7	26.3
	eGFR (ml/min/1.73m²)				
	Q1	64.5	85.1	85.4	85.3
	Median	81.0	97.4	96.0	96.0
	Q3	96.6	111.5	106.7	106.9
	% eGFR <90	63.1	33.4	34.4	34.5
	% eGFR <60	21.8	2.7	0.9	1.1
	% eGFR <45	10.3	0.5	0.04	0.1
	% eGFR <30	3.6	0	0.0	0.02

Supplementary table 5: List of items included in the RENALGO-EXPERT algorithm

DIAGNOSIS (ICD10)

E102	DIABETES TYPE 1 WITH RENAL COMPLICATIONS
E112	DIABETES TYPE 2 WITH RENAL COMPLICATIONS
I12	HYPERTENSIVE NEPHROPATHY WITH RENAL FAILURE
I13	HYPERTENSIVE CARDIONEPHROPATHY
I151	SECONDARY HYPERTENSION OTHER KIDNEY DISEASE
N00-N08	GLOMERULOPATHIES
N11-N13-N14	TUBULO-INTERSTITIAL RENAL DISEASES
N150	BALKAN NEPHROPATHY
N16	TUBULOINTERSTITIAL RENAL DISEASE IN DISEASES CLASSIFIED ELSEWHERE
N171	CORTICAL NECROSIS
N18	CHRONIC KIDNEY DISEASE
N19	RENAL FAILURE UNSPECIFIC
N20-N22	URINARY LITHIASIS
N25	TUBULOPATHY
N26	SCLEROUS KIDNEY
N27	SMALL KIDNEY OF UNKNOWN CAUSE
N280	ISCHEMIA AND KIDNEY INFARCTION
N29	OTHER CONDITIONS OF THE KIDNEY AND URETER
Q61	CYSTIC KIDNEY DISEASES
T861	FAILURE AND REJECTION OF A KIDNEY TRANSPLANT
Z49	MONITORING A DIALYSIS
Z940	PRESENCE OF KIDNEY TRANSPLANT

HOSPITAL DISCHARGE (DIAGNOSIS RELATED GROUPS)

CREATIONS AND REFECTIONS OF AV FISTULA, LEVEL 1
CREATIONS AND REFECTIONS OF AV FISTULA, LEVEL 2
CREATIONS AND REFECTIONS OF AV FISTULA, LEVEL 3
CREATIONS AND REFECTIONS OF AV FISTULA, LEVEL 4
CREATION AND REFECTION OF AV FISTULA, IN AMBULATORY
RENAL TRANSPLANTS, LEVEL 1
RENAL TRANSPLANTS, LEVEL 2
RENAL TRANSPLANTS, LEVEL 3
RENAL TRANSPLANTS, LEVEL 4
RENAL TRANSPLANTS
AUTOMATED PERITONEAL DIALYSIS TRAINING,
CONTINUOUS PERITONEAL DIALYSIS TRAINING AMBULATORY
HEMODIALYSIS TRAINING, IN SESSIONS
HEMODIALYSIS, IN SESSIONS
AUTOMATED PERITONEAL DIALYSIS, IN SESSIONS
CONTINUOUS AMBULATORY PERITONEAL DIALYSIS, IN-SESSION
MONITORING KIDNEY TRANSPLANTS, STAY LESS THAN 2 DAYS
KIDNEY TRANSPLANT MONITORING, LEVEL 1
KIDNEY TRANSPLANT MONITORING, LEVEL 2
KIDNEY TRANSPLANT MONITORING, LEVEL 3
KIDNEY TRANSPLANT MONITORING, LEVEL 4
STAYS INCLUDING THE INSTALLATION OF CERTAIN VASCULAR ACCESS, STAYS OF LESS THAN 2 DAYS
RENAL FAILURE, WITH DIALYSIS, IN AMBULATORY
RENAL FAILURE, WITH DIALYSIS, LEVEL 1
RENAL FAILURE, WITH DIALYSIS, LEVEL 2
RENAL FAILURE, WITH DIALYSIS, LEVEL 3
RENAL FAILURE, WITH DIALYSIS, LEVEL 4
RENAL FAILURE, WITHOUT DIALYSIS, LEVEL 1
RENAL FAILURE, WITHOUT DIALYSIS, LEVEL 2
RENAL FAILURE, WITHOUT DIALYSIS, LEVEL 3
RENAL FAILURE, WITHOUT DIALYSIS, LEVEL 4
RENAL FAILURE, WITHOUT DIALYSIS, VERY SHORT DURATION
HEMODIALYSIS IN A CENTER OR IN A MEDICALIZED DIALYSIS UNIT.
SIMPLE OR ASSISTED SELF CARE DIALYSIS
SELF CARE DIALYSIS TRAINING
APD TRAINING
CAPD TRAINING
HEMODIALYSIS
AUTOMATED PERITONEAL DIALYSIS (APD)

CONTINUOUS AMBULATORY PERITONEAL DIALYSIS (CAPD)
IN-CENTER HEMODIALYSIS PACKAGE
IN-CENTER HEMODIALYSIS PACKAGE FOR CHILDREN
HEMODIALYSIS PACKAGE IN MEDICALIZED DIALYSIS UNIT
SIMPLE SELF CARE DIALYSIS PACKAGE
ASSISTED SELF CARE DIALYSIS PACKAGE
HOME SELF-DIALYSIS PACKAGE
AUTOMATED PERITONEAL DIALYSIS (APD) PACKAGE
CONTINUOUS AMBULATORY PERITONEAL DIALYSIS PACKAGE (CAPD)
HOME HEMODIALYSIS AND SELF CARE TRAINING PACKAGE
AUTOMATED PERITONEAL DIALYSIS TRAINING PACKAGE
CONTINUOUS AMBULATORY PERITONEAL DIALYSIS TRAINING PACKAGE
AUTOMATED HOME PERITONEAL DIALYSIS TRAINING PACKAGE
CONTINUOUS AMBULATORY PERITONEAL DIALYSIS TRAINING PACKAGE AT HOME
AUTOMATED PERITONEAL DIALYSIS PACKAGE FOR HOSPITALIZATION OF 3 TO 6 DAYS
CONTINUOUS AMBULATORY PERITONEAL DIALYSIS PACKAGE FOR HOSPIT. FROM 3 TO 6 DAYS
HEMODIALYSIS TRAINING PACKAGE IN A MEDICAL DIALYSIS UNIT
DIALYSIS PACKAGE (HEMODIALYSIS SESSION)
DAILY PERITONEAL DIALYSIS SUPPLEMENT

BIOLOGICAL TEST

25-HYDROXYCHOLECALCIFEROL (25-OHD3)
ALBUMINURIA
ANTI-HBS ANTIBODIES
CLEARANCE (RENAL) OF CREATININE WITH BLOOD AND URINARY CREATININE DOSAGE
URINARY PAD URINE CYTOLOGY WITH STUDY OF CRYSTALS
URINE FLOW. RED BLOODS AND LEUKOCYTES PER MILLILITER (URINE PACK QUANT)
URINE FLOW. RED BLOODS AND LEUKOCYTES PER MINUTE (ADDIS, HLM, URINE PACKAGE QUANT)
DIHYDROXYL DERIVATIVES OF VITAMIN D.
COMPLETE IONOGRAM.
MICROALBUMINURIA (IMMUNOCHEMICAL ASSAY EXCLUDING STRIPS).
PHOSPHORUS
PROTEINURIA
PTH
BLOOD: CREATININE
BLOOD: UREA
BLOOD: UREA AND CREATININE
UR: PROTEINURIA, RESEARCH AND DOSAGE
UR. : CALCIUM (CALCIURIA)
UR. : CREATININE (CREATININURIA)
UR. : MAGNESURIA
UR. : OXALURIA
UR. : OXALURIA + CITRATURIA + MAGNESURIA
UR. : MINERAL PHOSPHORUS (PHOSPHATURIA)
UR. : POTASSIUM AND SODIUM (IONOGRAM, K + NA)
UR. : URINARY POTASSIUM
UR. : URINARY SODIUM
UR. : TYPING THE NATURE OF PROTEINURIA

DRUGS

VITAMIN D AND ANALOGS
DRUGS ACTING ON THE RENIN-ANGIOTENSIN SYSTEM
ALDOSTERONE ANTAGONISTS
HEPATITIS VACCINES
MYCOPHENOLIC ACID
SIROLIMUS
EVEROLIMUS
CICLOSPORINE
TACROLIMUS
AZATHIOPRINE
TOLVAPTAN
LASILIX SPECIAL 500 MG
MAGISTRAL PREPARATION
GLIFOZIN

PROCEDURES

ARTERIOVENOUS BRIDGE FOR VASCULAR ACCESS
ARTERIOVENOUS BRIDGE + ANGIOPLASTIE FOR VASCULAR ACCESS
BRIDGING/ANGIOPLAST AXILLAR CLAVICULAR VEIN /FEMORAL
CLOSE A FALSE ANEUVEYSM VASCULAR ACCESS +RECONSTRUCTION VASCULAR ACCESS
CLOSING A VASCULAR ACCESS
CONCENTRATED TEST URINE + DDAVP TEST
DISOBSTRUCTION VASCULAR ACCESS
DOPPLER OF UPPER MEMBERS ARTERIS
DOPPLER OF UPPER MEMBERS ARTERIS +DOPPLER OF UPPER MEMBERS VEINS
DOPPLER ULTRASOUND OF AN ARTERIOVENOOUS FISTULA FOR EXTRACORPOREAL CIRCULATION
DOPPLER UPPER MEMBERS VEINS
EXCLUSION 1FRONT ACCESS + BRIDGE.
EXERCISE A VASCULAR ACCESS + RECONSTRUCTION VASCULAR ACCESS.
EXERCISE A VASCULAR ACCESS WITHOUT RECONSTRUCTION
EXTRARENAL HEMOPERFUSION PURIFICATION SESSION
HEMOSTASIS A VASCULAR ACCESS
INSTALLATION A DOUBLE CURRENT CATHETER
INSTALLATION TWO TUNNELIZED CATHETER IN ONE VEIN
KIDNEY BIOPSY ON A TRANSCUT TARGET +ECHO GUIDE
KIDNEY BIOPSY ON MORE TRANSCUT TARGETS +ECHO GUIDE
KIDNEY BIOPSY TRANSCUTANEOUS JUGULAR VEIN + RADIO GUIDE

LOCAL DISOBSTRUCTION
PLACEMENT OF A CENTRAL CATHETER IN 2 DIFFERENT VEINS FOR EXTRACORPOREAL CIRCULATION, BY TRANSCUTANEOUS ROUTE
PLACEMENT OF A TUNNELED CENTRAL VENOUS CATHETER FOR EXTRACORPOREAL CIRCULATION, BY TRANSCUTANEOUS ROUTE
RECANALISATION OF THE DRAINAGE VEIN OF AN ARTERIOVEINOUS VASCULAR ACCESS WITH ENDOPROSTHESIS INSTALLATION, BY TRANSCUTANEOUS VASCULAR ROUTE
RECANALISATION OF THE DRAINING VEIN OF AN ARTERIOVEINOUS VASCULAR ACCESS WITHOUT STENT INSTALLATION, BY TRANSCUTANEOUS VASCULAR ROUTE
REDUCTION FLOW A ANEUVRYSM IN A VASCULAR ACCESS
REDUCTION FLOW FOR A VASCULAR ACCESS +ANASTOMOSIS AND ARTERIAL REFECTION
REDUCTION FLOW FOR A VASCULAR ACCESS + LIGATURE/REDUCTION ARTERIS CALIBER
RENAL ECHO + FEMALE PELVIS ECHO
RENAL ECHO +BLADDER ECHO
RENAL ECHOGRAPHY
TRANSCUTANEOUS KIDNEY BIOPSY WITHOUT GUIDE
ULTRASOUND KIDNEY +VESSELS
URINE DILUTION TEST
VENOUS SUPERFICIALIZATION AFTER FISTULA CREATION