

- diagnosis in computerized medical records in primary health care. *BMC Med Res Methodol.* 2011;11:146.
2. Sánchez-Celaya del Pozo M, Tranche Iparraguirre S. Documento de consenso sobre la enfermedad renal crónica. *S.E.N-semFYC. Aten Prim.* 2014;46:453–4.
 3. Salvador González B, Rodríguez Pascual M, Ruipérez Guijarro L, Ferré González A, Cunillera Puertolas O, Rodríguez Latre LM. Enfermedad renal crónica en atención primaria: prevalencia y factores de riesgo asociados. *Aten Prim.* 2015;47:236–45.
 4. Hossai Kawar B, El Nahas M. Obesity and diabetes in the developing world a growing challenge. *N Engl J Med.* 2007;356:213–5.
 5. Gómez-Huelgas R, Martínez-Castelao A, Artola S, Górriz JL, Menéndez E. Documento de consenso sobre el tratamiento de la diabetes tipo 2 en el paciente con enfermedad renal crónica. *Med Clin (Barc).* 2014;142:85.e1–10.
 6. Vara-González L, Martín Rioboó E, Ureña Fernández T, DalfóBaqué A, Flor Becerra I, López Fernández V. Prevalencia de enfermedad renal crónica en los hipertensos seguidos en los centros de salud de España y grado de control de su presión arterial (estudio DISEHTAE). *Aten Prim.* 2008;40:241–5.
 7. Lou Arnal LM, Campos Gutiérrez B, Cuberes Izquierdo M, Gracia García O, Turón Alcaine JM, Bielsa García S, et al. Prevalencia de enfermedad renal crónica en pacientes con diabetes mellitus tipo 2 atendidos en atención primaria. *Nefrología.* 2010;30:552–6.
 8. Levey AS, Jong PE, Coresh J, El Nahas M, Astor BC, Matsushita K, et al. The definition, classification and prognosis of chronic kidney disease: a KDIGO controversies conference report. *Kidney Int.* 2011;80:17–28.
 9. Aitken GR, Roderick PJ, Fraser S, Mindell JS, O'Donoghue D, Day J, et al. Change in prevalence of chronic kidney disease in England over time: comparison of nationally representative cross-sectional surveys from 2003 to 2010. *BMJ Open.* 2014;4:e005480.
 10. Salinero-Fort MÁ, San Andrés-Rebollo FJ, de Burgos-Lunar C, Abánades-Herranz JC, Carrillo-de-Santa-Pau E, Chico-Moraleja RM, et al. Cardiovascular and all-cause mortality in patients with type 2 diabetes mellitus in the MADIABETES Cohort Study: association with chronic kidney disease. *J Diabetes Complicat.* 2016;30:227–36.
- Guadalupe Alemán-Vega^{a,*}, Isabel Gómez Cabañas^b, Laura Reques Sastre^c, Javier Rosado Martín^d, Elena Polentinos-Castro^e, Ricardo Rodríguez Barrientos^e
- ^a Medicina Preventiva y Salud Pública, Hospital de La Princesa, Madrid, Spain
^b Servicio de Atención Rural (SAR) Algete, Madrid, Spain
^c Medicina Preventiva y Salud Pública, Escuela Nacional de Sanidad, Madrid, Spain
^d Centro de Salud Universitario Reina Victoria, Madrid, Spain
^e Unidad Docente de Atención Familiar y Comunitaria Norte, Unidad de Apoyo a la Investigación, Gerencia Asistencial de Atención Primaria, Red de Investigación en Servicios de Salud en Enfermedades Crónicas (REDISSEC), Madrid, Spain
- *Corresponding author.
 E-mail address: guadalupe.aleman@salud.madrid.org (G. Alemán-Vega).
- 2013-2514/© 2016 Sociedad Española de Nefrología. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).
<http://dx.doi.org/10.1016/j.nefro.2017.05.010>

The use of a quality care programme for the management of renal disease in the Aragon region[☆]

Utilidad de un programa de calidad asistencial para la gestión clínica de las enfermedades nefrológicas en Aragón

Dear Editor,

In 2009, the Framework Document on Managing Chronic Kidney Disease Care in Aragon was drafted by a multidisciplinary working group that comprised healthcare professionals, healthcare management professionals and members of kidney patient associations (ALCER Aragon). A structured, decentralised clinical management model was

established based on grouping patients by diseases, identifying opportunities for improvement and describing activities through their processes.^{1–3} The patient and family were placed at the centre of the process map, and a continuous improvement cycle was introduced. Moreover, a series of indicators—both technical and perceived—were monitored to periodically assess the patient's evolution. This systematic and planned measurement of quality indicators, together

[☆] Please cite this article as: Lou Arnal LM, Berni Wennekers A, Gracia García O, Logroño González JM, Gascón Mariño A, García Mena M, et al. Utilidad de un programa de calidad asistencial para la gestión clínica de las enfermedades nefrológicas en Aragón. *Nefrología.* 2017;37:345–347.

Table 1 – Evolution of the main technical quality indicators.

	2010	2011	2012	2013	2014	2015
Patients undergoing HD with ultrapure water, %	64	62	63	68	62	100
Monitors over 10 years old, %	36	30	25	10	5	2
Patients undergoing HD with special techniques, %	12	16	19	18	17	22
HD initiated on a scheduled basis in ACKD, %	–	70	82	84	86	88
Information on RRT modalities in ACKD, %	–	90	100	100	100	100
Origin of RRT patients						
ACKD, %	–	31.4	35.6	50.8	64.4	57.4
Not ACKD, %	–	42.7	37.3	21.1	15.6	19.2
Unscheduled, %	–	26.6	27.1	28.1	20	23.4
HD initiated with definitive vascular access						
ACKD, %	–	76.3	85.7	65.5	75.8	81.5
Not ACKD, %	–	26.2	36.5	75	71.4	33.3
Unscheduled, %	–	14	27.1	28.1	20	16
eGFR at the beginning of RRT ml/min/1.73 m ²	–	14	12	9.6	10	9.4
ACKD patients under conservative management, %	UK	UK	12	16	22	20
Living donor KTx, %	5.3	9.4	14.7	12.9	17.9	4.7
Peritoneal dialysis, %	8.9	18.9	22.4	32.2	28.7	28.2
Kt/V in PHD >1.3, %	32	37	34	36	46	53
At 3 and 6 months, %	52	53	50	58	64	78
Working peritoneal catheters per year, %	91	93	92	88	94	93
Peritonitis per months of treatment	1/31.2	1/34.3	1/41.2	1/38.4	1/43	1/43.6

UK: unknown.

with feedback and benchmarking,^{4,5} enabled us to achieve the objectives. Moreover, activities that are unrelated to the final process were also taken into account. These are information to patients and healthcare personnel, collection of management and indicator data, training of personnel and inspection of facilities.^{6,7} In this document, we evaluate the response to this intervention by means of monitoring the main indicators.

Improvement programmes centred on the following strategic plans were established at all nephrology units:

- Recovery of the patient's role in decision-making.
- Improvement of information systems.
- Designing a registry of patients undergoing renal replacement therapy in the autonomous community.
- Resolution of structural limitations: installing water treatment units to obtain ultrapure water in hospitals lacking the same and renewing equipment at dialysis centres.
- Increasing the percentage of patients on special techniques.
- Improving the critical points of the care process:
 - Optimisation of management of patients with ACKD: equity, reduction in variability.
 - Promoting kidney transplants from living donors.
 - Promoting home dialysis techniques.
 - Promoting conservative kidney management.

Analysing the main indicators after the development and implementation of the management process has allowed us to observe a significant improvement. The various clinical, nutritional, analytical and evolution-related parameters in the different RRT techniques have reached similar ranges to routine nephrology practice and are even higher than the national averages in some aspects.⁸ A brief selection of the changes among the other indicators is reflected in [Table 1](#).

We feel that the involvement of healthcare personnel and patients in management and the collaboration of the healthcare authorities facilitates the implementation of programmes that may improve healthcare.^{9,10} The implementation of the above-mentioned processes was especially difficult due to being performed at the time of the economic crisis, with significant financial limitations. The fact that the processes performed are effective (they truly improve the patients' situations) and efficient (they improve them with a reasonable investment and in many cases actually save money) has facilitated the creation of these units and treatment techniques.

REFERENCES

1. Sociedad Española de Nefrología. El libro blanco de la nefrología española (I). *Nefrología*. 2000;20:109–29.
2. Sociedad Española de Nefrología. El libro blanco de la nefrología española (II). *Nefrología*. 2000;20:214–33.
3. Sociedad Española de Nefrología. El libro blanco de la nefrología española (III). *Nefrología*. 2000;20:396–402.
4. Kiefe C, Allison JJ, Williams OD, Person SD, Weaver MT, Weissman NW. Improving quality improvement using achievable benchmarks for physician feedback: a randomized controlled trial. *JAMA*. 2001;285:2871–9.
5. Arenas MD, Álvarez-U de F, Moledous A, Malek T, Gil MT, Soriano A, et al. ¿Es posible mejorar nuestros resultados en hemodiálisis? Establecimiento de objetivos de calidad, retroalimentación (feedback) y benchmarking. *Nefrología*. 2008;28:397–406.
6. Grimshaw JM, Eccles MP, Walker AE, Thomas RE. Changing physicians' behavior: what works and thoughts on getting more things to work. *J Contin Educ Health Prof*. 2002;22:237–43.

7. Hearnshaw HM, Harker RM, Cheater FM, Baker RH, Grimshaw GM. Expert consensus on the desirable characteristics of review criteria for improvement of health care quality. *Qual Health Care.* 2001;10:173–8.
8. Aljama P. Grupo de Trabajo e Iniciativa ORD (Optimizando Resultados en Diálisis [Optimising Results in Dialysis]). *Nefrología.* 2012;32:701–3.
9. Pascual J, Rivera M, Fernández M, Tato A, Cano T, Tenorio MT. Funciones del facultativo especialista de área de nefrología y su importancia en el sistema sanitario. *Nefrología.* 2003;23:200–10.
10. Santiñá M, Arrizabalaga P, Prat A, Alcaraz A, Campistol JM, Trilla A. Instituto de gestión clínica para las enfermedades nefrourológicas: utilidad de un programa de calidad asistencial. *Nefrología.* 2009;29:118–22.

- ^a Servicio de Nefrología, Hospital Universitario Miguel Servet, Zaragoza, Spain
^b Servicio de Nefrología, Hospital Clínico Universitario Lozano Blesa, Zaragoza, Spain
^c Servicio de Nefrología, Hospital Alcañiz, Teruel, Spain
^d Servicio de Nefrología, Hospital General San Jorge, Huesca, Spain
^e Servicio de Nefrología, Hospital Obispo Polanco, Teruel, Spain
^f Servicio de Nefrología, Hospital San Juan de Dios, Zaragoza, Spain
^g Servicio de Nefrología, Hospital de la Defensa, Zaragoza, Spain
^h Servicio de Nefrología, Hospital Ernest Lluch, Calatayud, Zaragoza, Spain
ⁱ Servicio de Nefrología, Hospital de Barbastro, Barbastro, Huesca, Spain

Luis Miguel Lou Arnal^{a,*}, Ana Berni Wennekens^b, Olga Gracia García^c, José Manuel Logroño González^d, Antonio Gascón Mariño^e, Mercedes García Mena^f, Rosario Moreno López^g, Samia Etaaboudi^h, Orlando Martinsⁱ, Angel Blasco Forcén^a, José Esteban Ruiz Laiglesia^b, On behalf of the Sociedad Aragonesa de Nefrología

*Corresponding author.

E-mail address: lmLou@salud.aragon.es (L.M. Lou Arnal).

2013-2514/© 2016 Sociedad Española de Nefrología. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

<http://dx.doi.org/10.1016/j.nefro.2017.05.011>

Pulmonary haemorrhage in a patient with IgA nephropathy[☆]

Hemorragia pulmonar en paciente con nefropatía IgA

Dear Editor,

Henoch-Schönlein purpura (HSP) is a leukocytoclastic vasculitis affecting small-vessels that is rarely seen in adults. Lung involvement is extremely rare, with an unpredictable clinical evolution and high rates of mortality.^{1,2}

We report the case of a 69-year-old male patient with IgA nephropathy and a bilateral alveolar haemorrhage in the context of HSP. As for his personal history, he suffered from hypertension and atrial fibrillation, wore a mechanical prosthesis and was undergoing treatment with oral anticoagulants. The patient was admitted due to fever, dyspnoea, oedemas, coughing and expectoration. On admission, a deterioration of kidney function was observed (Cr 1.67 mg/dl; GFR 41 ml/min) as well as leukocytosis with a left shift. Following diuretic and antibiotic treatment, an improvement in kidney function occurred (Cr 0.9 mg/dl, GFR 82 ml/min) and the leukocytosis decreased. A few days later, the patient presented again deterioration of kidney function (Cr 2.1 mg/dl), anaemia (Hb 7.5 g/dl) along with purpuric lesions of the lower limbs. The tests performed showed: normal albumin, cholesterol and lactate dehydrogenase; an ESR of 52 mm, urine element and sediment with +++proteins, ++++Hb, >100 red blood cells/field, 24-hour urine protein of 1870 mg; IgA

437.00 mg/dl, normal remaining immunoglobulins and complement, antinuclear antibodies, anti-neutrophil cytoplasmic antibodies, anti-glomerular basement membrane antibodies and negative viral serology testing. Haptoglobins < 25, blood smear without schistocytes, positive direct Coombs test. Urological ultrasound with no pathological findings.

In light of suspected vasculitis, treatment was initiated with three boli of methylprednisolone 500 mg on consecutive days, followed by prednisone at 1 mg/kg every 24 hours. 72 hours later, symptoms of haemoptysis and anaemia appeared; a chest X-ray and chest CT scan were performed, showing findings suggestive of a bilateral alveolar haemorrhage and the presence of intraparenchymal pulmonary haematoma (Figs. 1 and 2). Treatment was initiated with a bolus of 500 mg/m² cyclophosphamide and immunoglobulins at 2 g/kg, spread across five doses. Five days later, frank haemoptysis, anaemia and significant respiratory effort occurred, prompting a transfer to ICU, where orotracheal intubation and mechanical ventilation were performed. The patient also required aspiration due to massive bleeding.

During the patient's stay in the ICU, six sessions of plasmapheresis were performed on alternate days, and treatment with corticosteroids was maintained. A clinical and analytical improvement was seen over the subsequent days and

[☆] Please cite this article as: Belmar Vega L, Fernández-Díaz C, Palmou Fontana N, Rodrigo Calabria E, Martín Penagos L, Arias Rodríguez M, et al. Hemorragia pulmonar en paciente con nefropatía IgA. *Nefrología.* 2017;37:347–349.