

CARMELO GIORDANO (1930-2016): A FOUNDER OF A SCHOOL OF RENAL NUTRITIONIST. #MP-868

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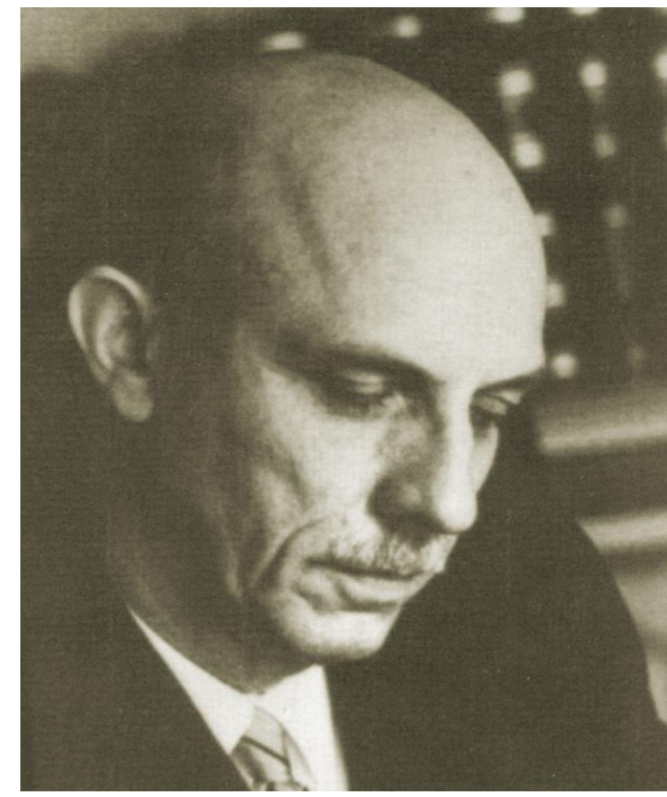
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CARMELO GIORDANO

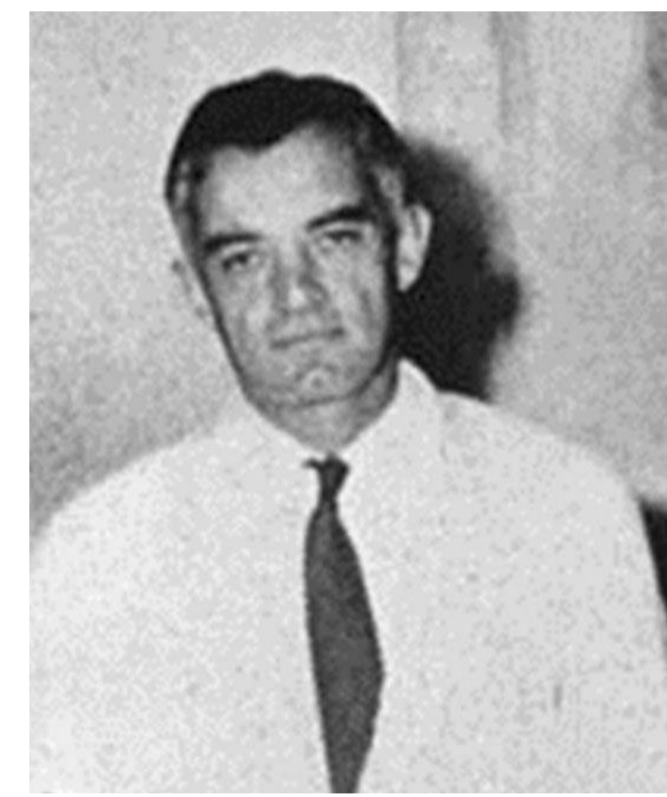
Carmelo Giordano (Carmine, Louis, Joseph Giordano) was born in Naples on August 23, 1930 in the house of Rafael and Anna Tirone. He received the MD cum laude in 1954. He was fellow and assistant to Professor Flaviano Magrassi and studied nephrology at the Peter Bent Brigham Hospital, University of Harvard in Boston, under the guidance of John P. Merrill (1958-1960). He was nominated Professor of Nephrology at the University Federico II, Naples in 1975 and Professor of Medicine at the Second University of Naples (1986-2002). The National Institutes of Health of the United States in Bethesda financed his research for more than 20 years. He started low protein alimentation (Giordano-Giovanetti diet according to Geoffrey M. Berlyne) with or without addition of amino acids and ketoacids and devised formula diets for CKD infants and children. He demonstrated that 85% of CKD patients receiving a 25 g protein diet were in positive nitrogen balance. Later he introduced the concept of energy load from dialysate in CAPD and the assessment of amino acid losses during hemodialysis and peritoneal dialysis. He also researched the minimum protein requirement under CAPD regimens. He synthesized, with Professor Renato Esposito, oxystarch and oxycellulose and introduced the use of carbon at low temperature and its regeneration at 90 °C. He introduced wearable and portable artificial kidneys. He died in Naples on May 12, 2016.



Carmelo Giordano



Flaviano Magrassi (1908 - 1974)



John Putnam Merrill (1917 - 1984)

Giordano's achievements

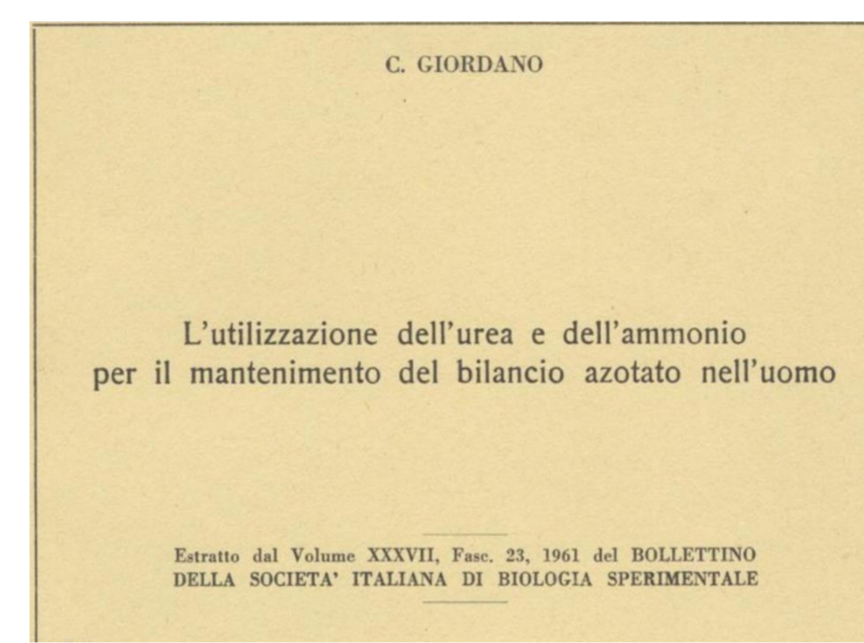
Honors

- Doctor Honoris causa of the Polish Academy of Sciences
- Golden Kidney Award from the European Society of Pediatric Nephrology
- Founder and President of the Italian Society of Nephrology
- Domenico Cotugno Award from the University of Bari
- President and Hon President of the Italian Society for Artificial Organs
- President of the Italian College of University Professors of Nephrology
- Hon. member of the German Society of Nutrition

Main Lectures

Polish Academy of Sciences, Nephrological Societies of Italy, Sweden, Brazil, Argentina, Japan, Czechoslovakia, Singapore, EDTA (1975, 1985), International Society of Nephrology, International Society of Artificial Organs, European Society of Nutritionists

DIETS IN CKD

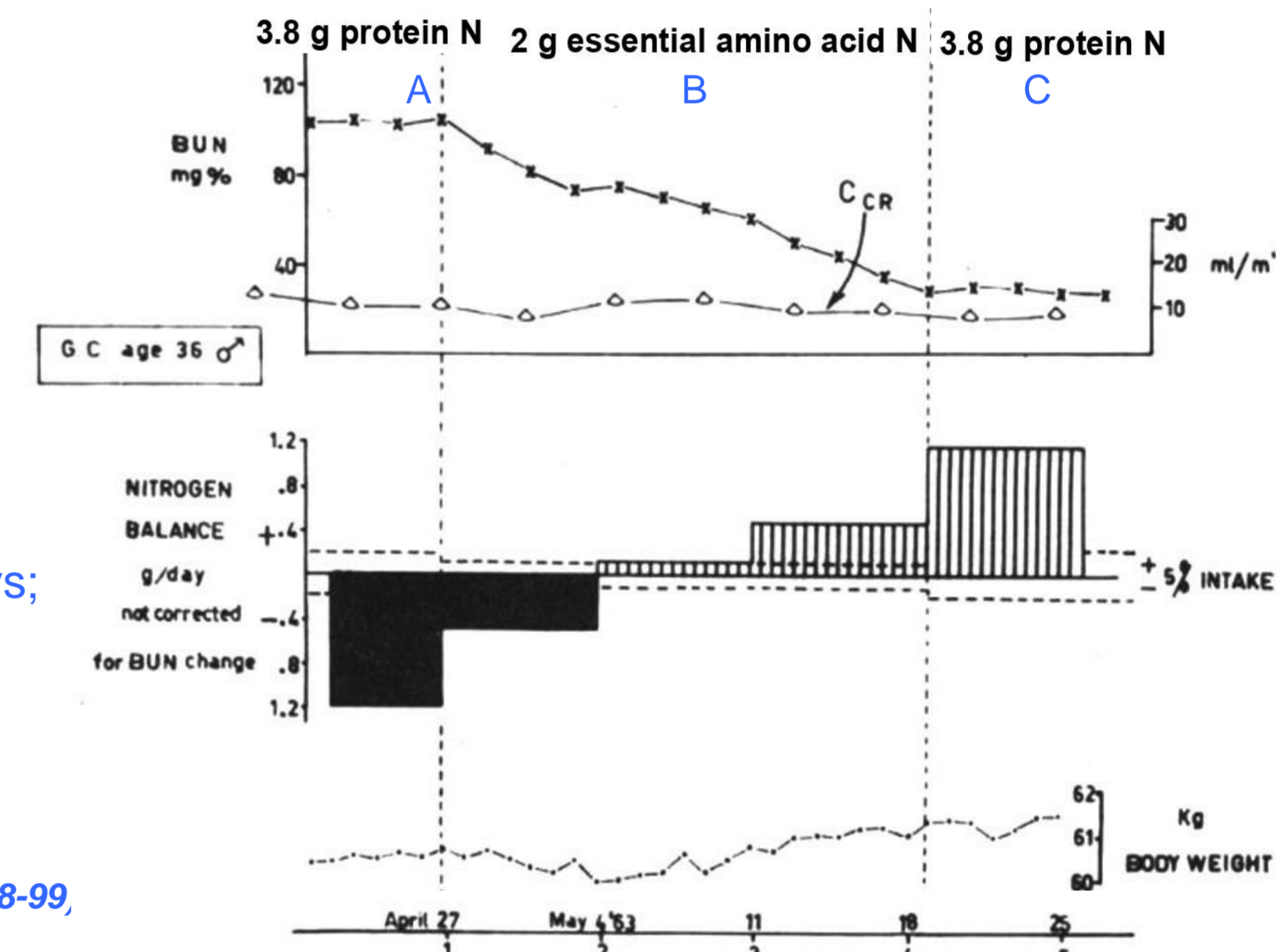


This is Giordano's 1st study on nutrition

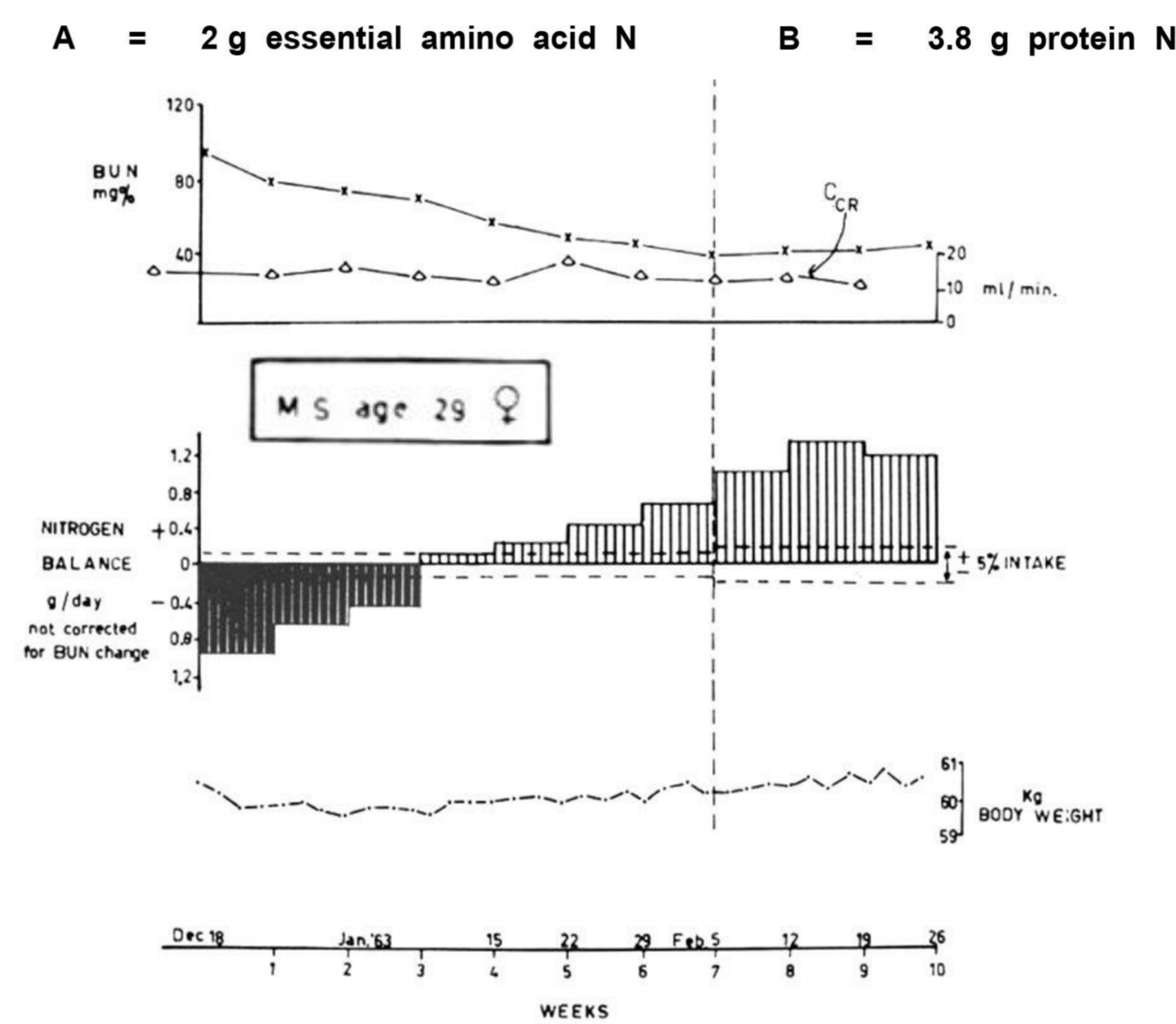
1 healthy subject (Giordano himself) on diet for 53 days;

- A) essential AA + 3 g N as glycine,
- B) E AA + 0.5 g of N as glycine,
- C) E AA + 2 g N as ammonium citrate,
- D) E AA + 2 g of N as urea

Urea and ammonium were utilized (*Boll SIBS 1961;37: 1198-99*)



Positive N balance in B and C (GIORDANO 1963, Proc. Int. Congr. of Nephrol in Prague)



Blood urea was reduced by L-essential Aminoacid (2 gr of N). Nitrogen balance was positive with a low protein diet (Giordano C.J. Lab. Clin. Med. 1963;62:231-246)

Case no.	Nitrogen free diet	Ess. amino acid diet 6-11 g	Low protein 17	20	23	25
1			-.600	+ .415		
2			-.403	+ .195		
3			-.407	-.597		
4	-1.337	+ .606	-.750			+1.200
5	-2.482	+ .100				+ .500
6	-3.662	+ .368	-.540		-.778	
7		-.931	-.605	-.854	-.070	+.292
8		+.306				+.935
9	-1.962	-.1416				-.1210
10						+.052
11			-.891	-.879	-.379	
12			-.650	-.318	+.550	+.972
13			+.095	+.450	+.780	+1.000
14			-.1682	-.1105		+.240
15			-.800		+.309	+.171
16			-.048	-.240		+.756
17			-.537	+.096		+.450
18				-.1000		+.432
19				+.092		
20				-.4073		
21				+.069	-.230	+.865
22				+.405	+.461	+1.210
23				-.1691		-.870
24				+.125	-.430	+.628
25				-.204	+.129	+.775

percentage of positivity 57%, 16%, 46%, 60%, 85%
Nitrogen Balance

Reprinted from THE LANCET, January 22, 1972, pp. 178-182

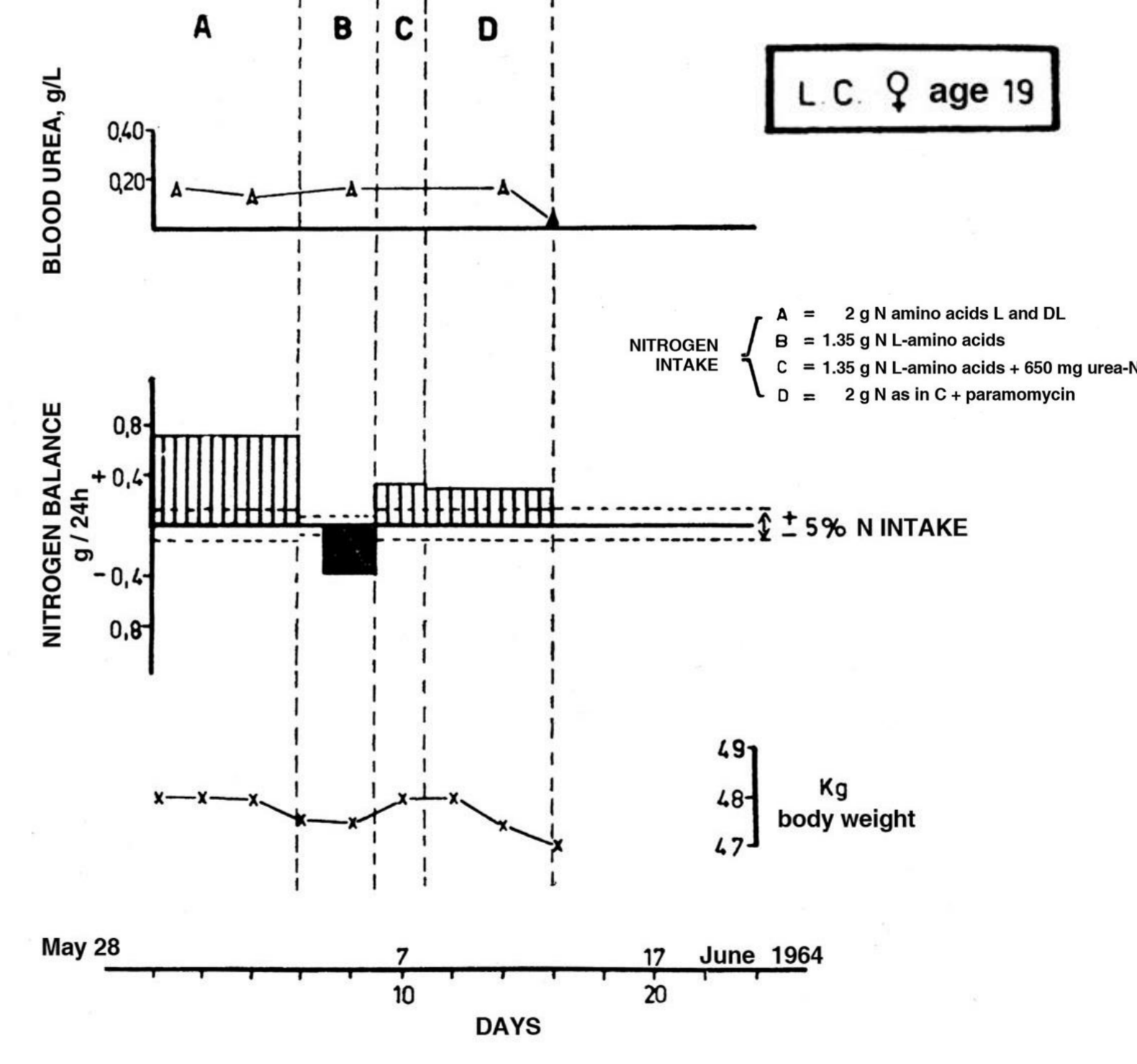
UTILISATION OF KETOACID ANALOGUES OF VALINE AND PHENYLALANINE IN HEALTH AND URÆMIA

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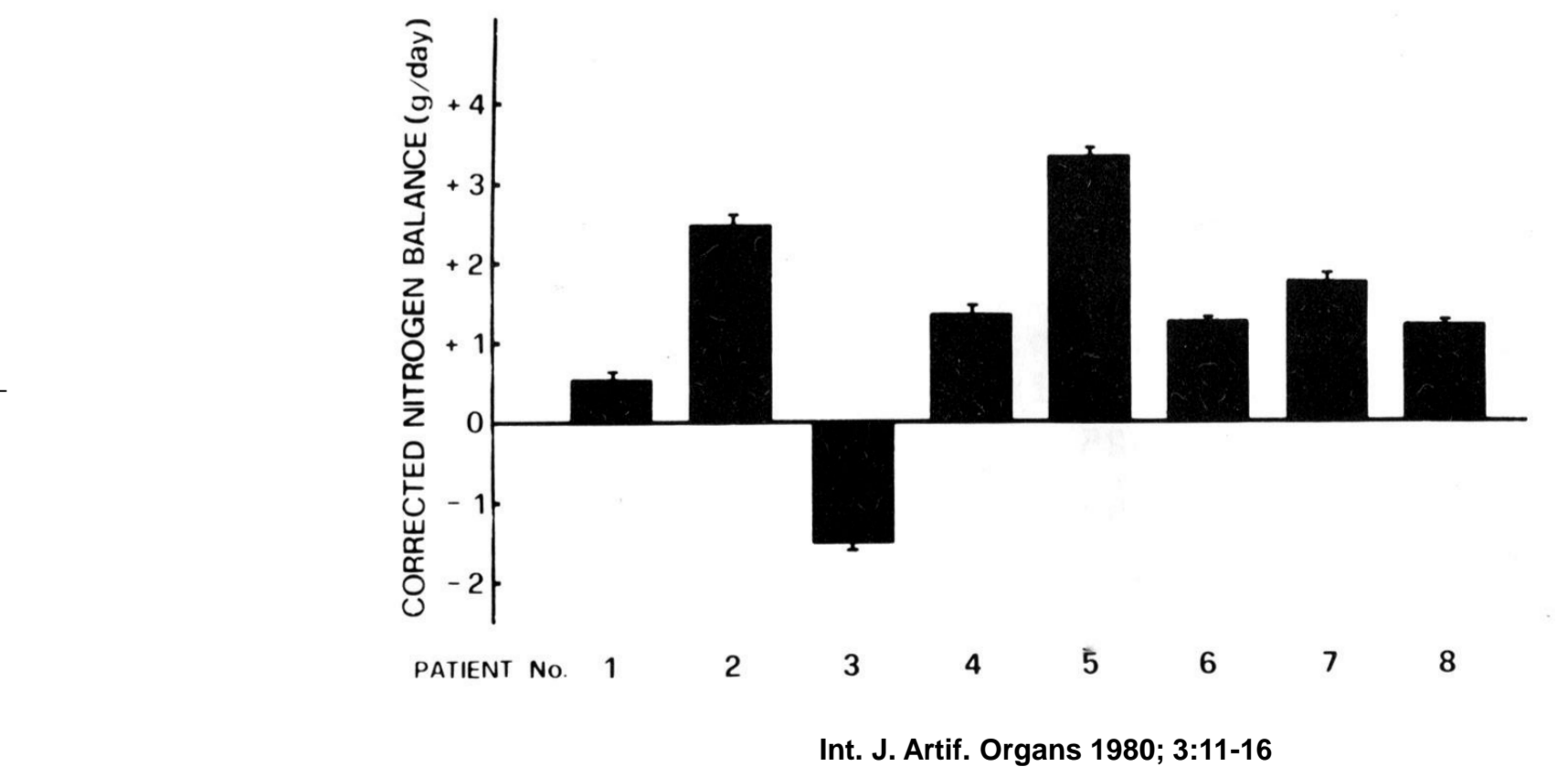
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¹⁵N labelled ammonium chloride in the course of experiments on the ability of α-keto-isovaleric acid and β-phenylglyoxylic acid to substitute for valine, phenylalanine and other non essential amino acids showed that Phenylalanine and Valine can be synthesized by healthy and uremic individuals (Reference no.26).

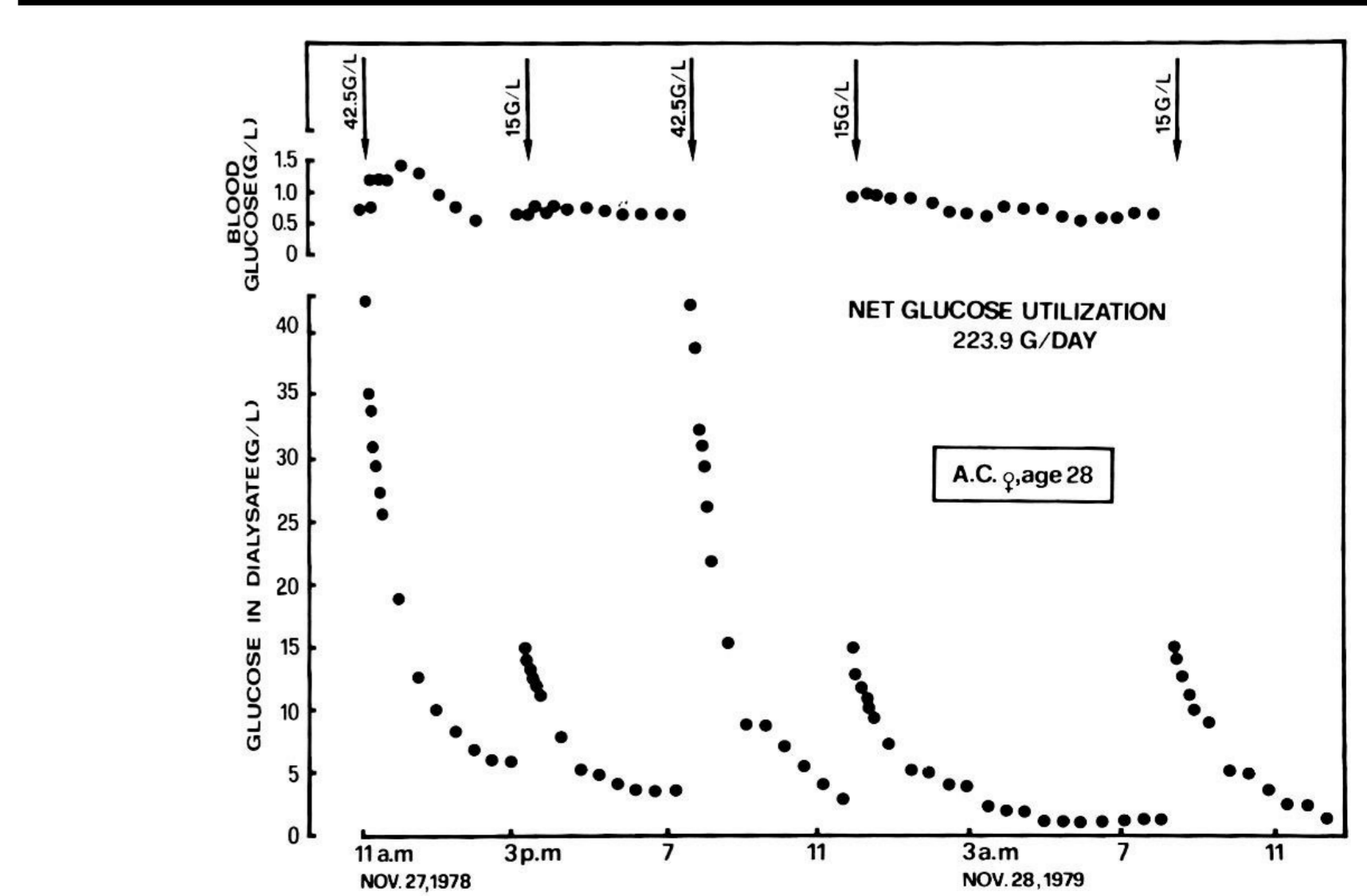


Growth in infants on various amino acid and keto acid formulations. Growth was superior with amino acid diets.

FORMULA*	DAILY GROWTH (g / day)	Pat 7	Pat 8
Control	Similar	13.3	10
Formula C amino		25.3	38.6
Formula C keto		10	8.3
Formula C amino		40	25
Formula D amino		50	31.5
Formula D keto		30	30



Int. J. Artif. Organs 1980; 3:11-16



Visiting scientists from abroad and from Italy

- Kazimierz Backzyk, 2nd Medical Clinic, University of Poznan, Poland
- Otto Busato, Professor of Nephrology, University of Porto Alegre, Brazil
- Malcolm Phillips, Consultant Nephrologist at Charing Cross Hospital, Medical Director Charing Cross and Hammersmith Hospitals Trust in London
- Alejandro Trevino Becerra, Chief Division of Nephrology, Mexico City, DF, Mexico
- Francisco Gonzales, Professor of Medicine, Louisiana State University, USA
- Shaul Massry, Professor of Medicine, Keck School of Medicine, Los Angeles
- Domenico di Landro, Assistant in Nephrology at the Polyclinic Teaching Hospital in Padua. Chief of Nephrology at Cannizzaro Hospital in Catania for studies on sorbents
- Gianfranco Romagnoli, assistant in nephrology at the Polyclinic Teaching Hospital in Padua, Chief of the same, for studies on sorbents

OXYSTARCH AND OXYCELLULOSE FOR UREMIA THERAPY

