Etude Gangliosides MONDOR

Techniques

	Test 1	Test 2	Test 3	Test 4
	Generic Assays	Zentec	D-Tek	Bühlmann
	Dot-line	Dot spot	Dot-Line	Elisa
Support	membrane	membrane	membrane	Elisa microplate
Gangliosides	11	9	11	5
Sulfatide	yes	yes	yes	no
Asialo GM1	no	no	no	yes
Galacto-cerebroside	no	no	no	no
Spectrum of glycolipids				
	GM1	GM1	GM1	GM1
	GM2	GM2	GM2	GM2
	GM3	GM3	GM3	GD1a
	GM4	GD1a	GM4	GD1b
	GD1a	GD1b	GD1a	GQ1b
	GD1b	GD3	GD1b	
	GD2	GT1a	GD2	
	GD3	GT1b	GD3	
	GT1a	GQ1b	GT1a	
	GT1b		GT1b	
	GQ1b		GQ1b	
Final sera dilution	1/101	1/501	1/101	1/50
Temperature	+ 4° C	+ 4° C	+ 4° C	+ 4° C
Serum incubation (h)	2	2	2	2
Conjugate incubation (h)	1	1	1	2
Conjugate label	Peroxydase de Raifort	Peroxydase de Raifort	Phosphatase Alcaline	Peroxydase de Raifort
Time (h)	3	<4	<4	5
Evaluation	Eye reading Semi quantitative	Eye reading Semi quantitative	Eye reading Semi quantitative	Cut-off quantitative

Critères entre diagnostic clinique et profil des Ac anti-gangliosides

Tableaux aigus	typique	possible	impossible
AMAN (acute axonal motor neuropathy)	IgG GM1	IgG GD1a/b, IgM GM1/GD1a/b	autres
AMAN forme paraparétique	IgG GD1a	IgG GM1, IgM GM1/GD1a/b	autres
Syndrome de Guillain-Barré démyélinisant "classique » ou AIDP	Aucun	IgM GM2	autres
Syndrome de Guillain-Barré ataxiant	IgG GD1b	IgG GD3, IgM GD1b/GD3	autres
Déficit pharyngo-cervico-brachial	IgG GT1a	IgG GQ1b	autres
Diplégie faciale et paresthésies	Aucun	Aucun	autres
Syndrome de Miller-Fisher	IgG GQ1b	IgG GD1b/GT1a, IgM GQ1b/GD1b/GT1a	autres
Tableaux chroniques			
Neuropathie motrice multifocale avec blocs de conduction	IgM GM1	IgM GD1a	autres
Neuropathie sensitivo-motrice multifocale avec blocs	Aucun	Aucun	autres
Polyradiculoneuropathie inflammatoire démyélinisante chronique	Aucun	Aucun	autres
CANOMAD	IgM GD1b, GD3, GT1b, GQ1b	Aucun	autres

Critères entre diagnostic clinique et profil des Ac anti-gangliosides

Table 3. Recommended and minimal criteria used in the study for a positive anti-ganglioside antibody finding in a patient serum.

Clinical diagnosis	Recommended positivity criteria[1, 2, 9, 12, 23]	Minimal positivity criteria *
GBS with ophthalmoplegia	GQ1b and additional GD1a/GT1a/GT1b IgG	GQ1b IgG
GBS: AMAN	GM1, GD1a and additional GT1a/ GT1b IgG	GM1 and GD1a IgG
GBS: AMSAN	GM1, GD1a, GD1b and GT1a/GT1b IgG	GM1, GD1a, and GD1b IgG
MFS	GT1a and GQ1b IgG	GQ1b IgG
GBS post CMV infection	GM2 IgM	GM2 IgM
M-IgM chronic motor peripheral neuropathy	GM1 and GD1b	High levels of GM1 with M-IgM
CANOMAD	GD1b, GD3, GT1b, GQ1b IgM [2]	High levels of antibodies: GQ1b IgM and one disialylated ganglioside between: GD1b, GD2, GD3, GT1a , GT1b IgM
MMN	GM1 and GD1b IgM	GM1 IgM

GT1a/GT1b = atteinte bulbaire ?

Atteinte sensitive ?

* - Minimal criteria are based on basic profiles including 5 immunodominant gangliosides present on each test, AMAN - acute motor axonal neuropathy, AMSAN - acute motor and sensory axonal neuropathy, CANOMAD - Chronic Ataxic Neuropathy Ophthalmoplegia, IgM-paraprotein cold Agglutinins Disialosyl antibodies, CMV - *cytomegalovirus*, GBS - Guillain-Barré syndrome, M-IgM - Monoclonal IgM antibodies, MMN - multifocal motor neuropathy with conduction blocks.

Résultats

			GanglioCombi, Bühlmann Lab		Anti-Gangliosid Dots, D-Tek SA		Dotzen Ganglio Profile, Zentec SA	
		Electroclinical diagnosis	**IgG**	**IgM**	**IgG**	**IgM**	**IgG**	**IgM**
Patient 1	F, 57y	AMAN	GM1,GD1a,GD1b		GM1,GD1a,GD1b,GT1b		GM1,GD1a,GD1b,GT1b	
Patient 2	F, 38y	AMAN	GM1,GD1b		none		GM1	
Patient 3	M, 28y	AMAN (paraplegic form)	GD1a,GQ1b		GD1a,GT1a			
Patient 4	M, 56y	AMAN (paraplegic form)	GD1a		GD1a		GD1a	
Patient 5	M, 23y	AMAN (paraplegic form)	GD1a	GD1a	none		none	GD1a
Patient 6	M, 70y	AMAN (paraplegic form)	GD1a				GD1a	
Patient 7	F, 59y	Classical demyelinating GBS				GM2		GM2, GD1a
Patient 8	F, 32y	Classical demyelinating GBS		GM2				GM2
Patient 9	M, 79y	Classical demyelinating GBS	GD1b					GM2
Patient 10	F, 77y	Classical demyelinating GBS						
Patient 11	F, 48y	Ataxic GBS	none	GM1	none		none	GM1
Patient 12	F, 57y	Facial diplegia form of GBS	none		none		none	
Patient 13	M, 66y	Miller-Fisher form of GBS	GQ1b		GQ1b,GT1a	GM1,GD1b,GT1a,GQ1b	GQ1b, GT1a	GM1
Patient 14	M, 75y	Multifocal motor neuropathy with conduction blocks		GM1,GD1b		GM1		GM1
Patient 15	F, 56y	Multifocal motor neuropathy with conduction blocks		GD1a		none		none
Patient 16	F, 59y	Multifocal motor neuropathy with conduction blocks		none		none		none
Patient 17	F, 65y	Multifocal motor neuropathy with conduction blocks		GD1a		none		none
Patient 18	M, 74y	CANOMAD		GD1a		GD1a,GD1b		none
Patient 19	F, 70y	CANOMAD		GD1b,GQ1b		GD1b		GD1b,GD3, GQ1b
Patient 20	M, 52y	Chronic inflammatory demyelinating polyneuropathy	GD1b	GD1b, GD1a		GM2,GD1b,GT1b		GD1b
Patient 21	M, 71y	Chronic inflammatory demyelinating polyneuropathy	none		none		none	
Patient 22	M, 71y	Chronic inflammatory demyelinating polyneuropathy	none		none		none	

in red: expected Anti-ganglioside Antibodies, in black: possible Anti-ganglioside Antibodies, in blue: unexpected Anti-ganglioside Antibodies

GT1a/GT1b = atteinte bulbaire ?

Atteinte du nerf occulo-moteur ?

Atteinte motrice ?

Résultats

	Bullman	D-Tek	Zentec
Diagnostic + (expected anti-gangliosides Ab)	10	8	8
Diagnostic + (possible anti-gangliosides Ab)	4	1	4
Diagnostic + (no anti-gangliosides Ab)	3	3	3
Erroneous positivities	4	4	5
Erroneous negativities	1	5	5
Dg sensitivity/ VPP	85%/89%	57%/92%	70%/88%