SEROGROUP Z INVASIVE MENINGOCOCCAL DISEASE FIRST CASE REPORT IN PORTUGAL

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Background

First described in 1961, *Neisseria meningitidis* serogroup Z disease reports in the literature are scarce, being mostly associated with carriage.

Case Presentation Summary

A nine-year-old boy with a history of type 1 diabetes and hypothyroidism, fully vaccinated (+1 4CMenB), presented to the emergency room with fever and a rash. Physical examination revealed slurred speech, neck stiffness and a purpuric rash.

Blood tests and lumbar puncture were performed and prompt empirical treatment with ceftriaxone was initiated in the first hour. Cerebrospinal fluid (CSF) was clear with 820 white cells (100% polymorphonuclear) and the gram stain showed gram-negative diplococci bacteria.

Approximately six hours after admission the patient evolved with hypotension resistant to fluid resuscitation (60mL/Kg)

that improved with dopamine perfusion (max 10mcg/Kg/min).

	D1	D2	D4	D7
CRP (mg/L)	154	255	108	20
WBC (10 ⁹ /L)	21,6	-	11,8	8,5
Neut/Ly (%)	90/6	-	63/26	48/38
Plat (10 ⁹ /L)	165	-	99	266
Hb (g/dL)	13,1	13,1	12,9	13,2
ALT/AST (U/L)	23/-	21/22	-	44/27
INR/APTT (s)	1,77/26	1,58/27	-	1,15/22
Alb (g/dL)	3,8	2,5	3,1	-
Cr/Ur (mg/dL)	0,73/28	0,73/28	-	0,38/31
Na+ (mmol/L)	137	137	142	136

Table – Blood tests during Hospital stay

The patient presented a very favorable clinical evolution without acidosis or perfusion deficits and shock reversion 12 hours after. Despite moderate unilateral knee arthritis and mild headaches, he was discharged 7 days later without any sequels.

CSF culture was negative and blood culture was positive and sent to the national reference laboratory. **Serogroup Z and clonal complex sequence type ST-cc865** were achieved by whole-genome sequencing including in silico determination of serogroup and MLST.

Learning Points/Discussion

The authors describe the first case of *N.meningitidis* serogroup Z in Portugal and one of the few reports of invasive disease in the literature. Adequate surveillance is of major importance and should be warranted as the emergence of new virulent pathogenic strains raises concerns about rare meningococcal serogroups becoming epidemic.