ACUTE ISCHEMIC STROKE
&
ACUTE MYOCARDIAL INFARCTION
REAL-TIME RISK ASSESSMENT
急性缺血性中風 & 急性心肌梗塞風險評估報告 (範本)

Patient:	Hospital ID:
Age: 53 歲	Treating Physician:
Sex: Male	Specimen ID: AIS#
Order Received: 2023/12/	Sampling Date: 2023/12/

Lab Requisition #:
Specimen Type: Touch Exosome DNA
Date Reported:
Clinical Indication:

RESULTS:

ACUTE ISCHEMIC STROKE (AIS) RISK ASSESSMENT

急性缺血性中風 風險評估

AIS BIOMARKER AIS 生物標記	S100B	SITURIN 2	DIAGNOSIS
RISK LEVEL 風險等級	**+**	**++**	*MODERATE RISK* 中度風險
ATTRIBUTE 屬性	Systemic inflammation in acute ischemic stroke 急性缺血中風系统炎症	Regulation of AIS pathogenesis and balancing immune homeostasis 管制中風發病機制及平衡全面免疫穩態	

INTERPRETATION

MODERATE RISK FOR ACUTE ISCHEMIC STROKE

急性缺血性中風中度風險

當特定欄位為”**-**” 時，該基因目前“無過量表達” .
當特定欄位為”**+**” 時，該基因目前已出現“低度過量表達” .
當特定欄位為”**++**” 時，該基因目前已出現“中度過量表達” .
當特定欄位為”**+++**” 時，該基因目前已出現“高度過量表達” .

The pathogenesis of AIS involves oxidative stress, damaged mitochondrial function, post-stroke inflammation. The expression of SIRT 2 is associated with AIS disease severity, pro-inflammatory cytokines expression and unfavorable prognosis in AIS

patients. Most importantly, SIRT2 is involved in the regulation of stroke pathology and plays a role in promoting the progression of brain injury caused by ischemia.
AIS 的發病機制涉及氧化壓力，線粒體功能受損，中風後炎症。SIRT 2 的表達與 AIS 患者的 AIS 疾病嚴重程度、促炎細胞因數表達及中風病人不利預後有關。最重要的是，SIRT2 參與中風病理學的調控，並參與促成缺血引起的腦損傷的進展。

ACUTE MYOCARDIAL INFARCTION (AMI) RISK ASSESSMENT
急性心肌梗塞 風險評估

AMI BIOMARKER AMI 生物標記	S100B	S100A12	DIAGNOSIS
RISK LEVEL 風險等級	+	+	*LOW RISK* 低風險
ATTRIBUTE 屬性	Inflammatory factor associated with onset of chronic heart failure 與慢性心臟衰竭發作相關的炎症因數	Pro-inflammatory factor in atherosclerotic plaques 動脈粥樣硬化斑塊中的促炎因數	

INTERPRETATION

LOW RISK FOR ACUTE MYOCARDIAL INFARCTION 急性心肌梗塞低度風險

當特定欄位為”**-**” 時，該基因目前“無過量表達” .
當特定欄位為”**+**” 時，該基因目前已出現“低度過量表達” .
當特定欄位為”**++**” 時，該基因目前已出現“中度過量表達” .
當特定欄位為”**+++**” 時，該基因目前已出現“高度過量表達” .

S100A12 predominantly localizes in activated macrophages in atherosclerotic plaques and its level might reflect plaque burden, composition, focal inflammation, and instability of thrombotic atherosclerotic lesions. Circulating S100A12 levels are not elevated in patients with stable coronary artery disease but are increased in those with acute coronary syndromes after plaque rupture. The plasma concentration of S100A12 is elevated in the early stage of AMI due to plaque rupture or erosion, and thus can serve as an effective biomarker for the early diagnosis of AMI in patients with chest pain.
S100A12 主要位於動脈粥樣硬化斑塊中被啟動的巨噬細胞中，其表達水準可反映斑塊形成，組成，局灶性炎症及血栓性動脈粥樣硬化的病變不穩定性。在穩定的冠狀動脈疾病患者中，循環系統中 S100A12 表達水準不會升高，但在斑塊破裂後出現急性冠脈綜合症的患者，循環系統中 S100A12 會升高。由於 S100A12 在血漿中的表達濃度會在心肌梗塞早期時因動脈斑塊破裂或消蝕而升高，所以可作為生物標誌物來有效預先偵測急性心肌梗塞。

ATHEROSCLEROSIS DNA TEST (動脈粥樣硬化 DNA 檢測)

RISK GENES 風險基因	EXPRESSION LEVEL 基因表達等級	BRAIN AGE 腦齡	AS SCORE 動脈粥樣硬化指數	RANGE
S100B	4.0	57	19.7	*0 ~ 30*
S100A12	4.0			
SITURIN 2	5.0			

INTERPRETATION

AT RISK OF MID-STAGE ATHROSCLEROSIS

中期動脈粥樣硬化風險

*ARS Score=(Age-50)/10+10xLog[s100B]·[SIRT2]·[s100A12]

(AS SCORE 評估範圍 0 至 30 分)
20-30: 動脈粥樣硬化後期，高度風險
10-20: 動脈粥樣硬化中期，中度風險
0-10: 正常，低度風險

RECOMMENDATION

Regular checkup for AIS & AMI in 3 months.

建議每 3 個月作一次急性心梗&中風前兆預警篩檢

經介於 45 至 90 歲間之 362 位糖尿病患者臨床樣本的驗證，其診斷敏感性和特異性，如下表所示。

PERFORMANCE CHARACTERISTICS

Following study is based on 362 diabetes patients of 45-90 years old.

ATHEROSCLEROSIS DNA TEST		VALIDATED DIABETES SAMPLES		TOTAL
		POSITIVE	NEGATIVE	
AS Score*	≥ 20	28	1	29
	< 20	0	333	333
TOTAL		28	334	362

Sensitivity: 100%	Specificity: 99.7%	PPV: 96.5%	NPV: 100%
靈敏度	特異性	陽性預估值	陰性預估值

*AS Score=(Age-50)/10+10xLog[s100B]·[SIRT2]·[s100A12]

Sign: *BING LING, MD* Date: 2024/1/