



Title	Electron microscopic findings predict clinical outcomes in patients with non-ischaemic cardiomyopathy
Author(s)	樋口, 理絵
Citation	大阪大学, 2025, 博士論文
Version Type	
URL	https://hdl.handle.net/11094/105254
rights	
Note	やむを得ない事由があると学位審査研究科が承認したため、全文に代えてその内容の要約を公開しています。全文のご利用をご希望の場合は、大阪大学の博士論文についてをご参照ください。

The University of Osaka Institutional Knowledge Archive : OUKA

<https://ir.library.osaka-u.ac.jp/>

The University of Osaka

論文内容の要旨

Synopsis of Thesis

氏 名 Name	樋口 理絵
論文題名 Title	Electron microscopic findings predict clinical outcomes in patients with non-ischaemic cardiomyopathy (電子顕微鏡所見を用いた非虚血性心筋症患者の臨床転帰の予測)
論文内容の要旨 〔目的(Objective)〕 Electron microscopy reveals microstructural alterations in cardiomyocyte nuclei and myofilaments in non-ischemic cardiomyopathy (NICM), particularly in dilated cardiomyopathy (DCM). Nevertheless, the correlation between such observations and clinical outcomes, including prognosis and left ventricular reverse remodeling (LVRR), remains unclear. This study aimed to examine the association between electron microscopic findings and outcomes in patients with NICM. 〔方法ならびに成績(Methods/Results)〕 In this multicenter, prospective, observational study, 170 patients with NICM with reduced ejection fraction (EF) <40% scheduled for diagnostic endomyocardial biopsy and optimization of medical therapies were enrolled. Electron microscopic findings of cardiomyocytes: discontinuous or continuous nuclear envelopes and injured or preserved myofilaments were evaluated. Data on cardiac events (cardiac death or left ventricular assist device implantation) and LVRR, defined as achieving an EF >35% with a 10% unit absolute increase, were collected 1-year post-biopsy. A total of 148 patients were finally analyzed. Discontinuous nuclear envelopes and myofilament injuries were observed in 17 (11%) and 46 (31%) patients with NICM, respectively. The incidence of cardiac events at 1 year did not differ between groups with discontinuous and continuous nuclear envelopes (12% vs 6%, odds ratio[OR]: 2.05; 95% confidential interval[CI]:0.40-10.60, $p = 0.391$), whereas the LVRR rate was significantly lower in the discontinuous group than in the continuous group (24% vs. 52%, OR:0.29; 95% CI: 0.08-0.92, $p = 0.036$). The incidences of cardiac events and LVRR at 1 year differed between the injured and preserved myofilament groups (15% vs. 3%, : OR: 6.64; 95% CI: 1.32-33.5, $p = 0.022$; 15% vs. 64%, OR; 0.10; 95% CI: 0.04-0.25, $p < 0.001$, respectively). These associations between electron microscopic findings and clinical outcomes persisted, even in patients who were finally diagnosed with DCM. 〔総括(Conclusion)〕 Discontinuous nuclear envelopes were associated with a reduced LVRR rate, whereas injured myofilaments were correlated with higher 1-year cardiac events and a decreased LVRR. Evaluation of electron microscopic images in diagnostic endomyocardial biopsy can facilitate risk stratification of NICM or DCM with reduced EF.	

論文審査の結果の要旨及び担当者

(申請者氏名) 樋口 理絵				
論文審査担当者	(職)	氏 名		
	主 査	大阪大学教授	坂田 泰史	署 名
	副 査	大阪大学教授	山本 ショー	署 名
	副 査	大阪大学教授	三川 繁	署 名

論文審査の結果の要旨

本論文は、非虚血性心筋症（NICM）、特に拡張型心筋症（DCM）患者における電子顕微鏡所見と臨床転帰との関連を検討した多施設共同前向き観察研究である。左室駆出率40%未満のNICM患者170例を対象に心筋生検を行い、核膜の連続性および筋原線維損傷の有無を評価した。最終的に148例を解析した結果、核膜不連続は11%、筋原線維損傷は31%に認められた。核膜不連続は心イベントとは関連しなかったが、左室リバーズリモデリング（LVRR）の達成率が有意に低下していた（24% vs 52%）。筋原線維損傷は、1年後の心イベント発生率増加（15% vs 3%）およびLVRR達成率低下（15% vs 64%）と有意に関連していた。これらの結果はDCM患者においても同様に認められ、心不全患者の心筋生検で得られた検体の電子顕微鏡所見がリスク層別化に有用である可能性が示唆された。本論文は心不全患者の予後予測の新たな方法を提示し、臨床的意義が大きく、学位論文に値すると思われる。