

情報 NO.	基本情報				技術適用疾病				技術基本能力									
	題名 サマリー	著者	雑誌名 Medline Index	機器技術名称	製品 情報	疾病名称系			重篤度系			適用療法系						
						一般名称 ICD-10分類	疾病の severity	疾病の 規模	疾病の 複雑 性	その他リ スクの程 度	手技・処置名称 コード	その他併用 療法	対比療法	正確 性・確 実性	迅速 性・反 応性	早期診断 性 (予見性・ 予知性)	インテ リジェ ンシー	
54	Cardiopulmonary bypass circuit treated with surface-modifying additives: a clinical evaluation of blood compatibility.	Gu Y.J, Boonstra PW, Rijnsburger AA, Haan J, van Oeveren W.	Ann Thorac Surg 1988 May;65(5):1342-7 9594864		treated with surface-modifying additive	coronary artery disease												
55	Inflammatory mediators in adults undergoing cardiopulmonary bypass: comparison of centrifugal and roller pumps.	Ashraf S, Butler J, Tian Y, Cowon D, Linton S, Saunders NR, Wattersson KG, Martin PG.	Ann Thorac Surg 1988 Feb;65(2):480-4 9485250	centrifugal vortex pumps		coronary artery disease												
56	Effect of anticoagulation protocol on outcome in patients undergoing CABG with heparin-bonded cardiopulmonary bypass circuits.	Aldea GS, O'Gara P, Shapira OM, Treanor P, Osman A, Patalis E, Arkin C, Diamond R, Babikian V, Lazzar HL, Shemin RJ.	Ann Thorac Surg 1988 Feb;65(2):425-33 9485240	heparin-bonded CPB circuits(HBCs)		coronary artery disease												
57	A comparative evaluation of the effect of pump type and heparin-coated surfaces on platelets during cardiopulmonary bypass.	Misoph M, Babin-Ebell J, Schwender S.	Thorac Cardiovasc Surg 1997 Dec;45(6):302-6 9477463	CPB circuit		coronary artery disease												

情報 NO.	基本情報		技術基本能力										
	題名 サマリ	治療系	治療性	根治 率・治癒 率	救命率・生存率	再発率・予防 率	その他の予後リスク	感受性(疾病) 即効性、適用性、機能的性	影響性 悪化性、発症性、併発 性(合併症)、その他の リスク	機能回復性	療養系	予防系	
54	Cardiopulmonary bypass circuit treated with surface-modifying additives: a clinical evaluation of blood compatibility.	治療性	During CPB, platelet count and beta-thromboglobulin were found similar in both groups. Prothrombin activation indicated by fragment F1+2 was found less in the XMA(P<0.05). After CPB, platelet deposition on the CPB circuit was significantly less(p<0.05) in the SMA. Complement activation identified by C3a and terminal complex C5b-9 did not differ between the two groups. ut C4a generation was less in the SMA(p<0.05). Postoperatively, chest tube drainage, blood transfusion, duration of ventilatory support, as well as ICU stay were not significantly different between the two groups							duration of ventilatory support, as well as the ICU and hospital stay were not significantly different between the two groups			
55	Inflammatory mediators in adults undergoing cardiopulmonary bypass: comparison of centrifugal and roller pumps.	治療性	In both groups, traces of tumor necrosis factor-alpha were observed infrequently and IL-1Beta was not detected. Plasma levels of IL-6 and IL-8 increased during and after CPB, reaching a peak at 2 hours after protamine administration in both groups before returning toward baseline at 24 hours. The release of IL-6 was significantly greater in the centrifugal group(p<0.05), whereas IL-8 concentration did not differ through out the study period. Levels of terminal complement increased in both groups perioperatively, reaching a peak 30min after protamine administration, whereas neutrophil counts and elastase peaked 2hours after. Plasma terminal complement, neutrophil counts, and elastase release were significantly higher in the centrifugal group(p<0.05). Peak terminal complement										
56	Effect of anticoagulation protocol on outcome in patients undergoing CABG with heparin-bonded cardiopulmonary bypass circuits.	治療性	the requirement of blood products were(lower vs higher: 24.2 vs 35.8%, p=0.047), and the recievment of homologous donor units(lower vs higher: 0.50+/-0.92 vs 1.08+/-2.10U, p=0.005). Clinical outcome were uniformly outstanding(but similar) in both groups. In study2, thrombin generation increases during CPB in both groups, but was unrelated to the anticoagulation protocol or the activated clotting time(t=2-0.03). No difference between the two groups were noted in the number of microemboli detected by transcranial Doppler analyses during CPB(n=40) or in the postoperative neurologic and neuropsychologic outcomes(n=30)							no differences in both groups in the number of postoperative neurologic and neuropsychologic outcomes(n=30)			there was a modest reduction in the legh of hospital stay in the lower group(5.26+/-1.23 vs 5.63+/-1.72, p=0.05)
57	A comparative evaluation of the effect of pump type and heparin-coated surfaces on platelets during cardiopulmonary bypass.	治療性	None of the tested CPB systems did affect platelet count. The percentage of GMP-140-positive platelets increased slightly early during CPB, whereas it decreased significantly postoperatively; group differences were observed between B and C after protamin administration.										

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	題名 サマリー	親和性(複合技術)		信頼性・安全性			運用性					患者QOL系		
		他技術との 適合性	相乗効果の 程度	故障率	安全性	アウトカムの 安定性 結果の均一性、 再現性	その他のリスク ヘッジ能力	操作性	安定性	可搬性	管理性・ 保守性	規格・基準 適用性	人材養成・ト レーニングの 簡便性	生物レベルのQOL (個への対応、身体的影響性、精神 的影響性、生活への影響)
54	Cardiopulmonary bypass circuit treated with surface-modifying additives: a clinical evaluation of blood compatibility.													the ICU and hospital stay were not significantly different between the two groups
55	Inflammatory mediators in adults undergoing cardiopulmonary bypass: comparison of centrifugal and roller pumps.													
56	Effect of anticoagulation protocol on outcome in patients undergoing CABG with heparin-bonded cardiopulmonary bypass circuits.													
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情報 NO.	基本情報				技術補足情報1				技術補足情報2			その他					
	題名 サマリー	その他のQOL (技術能力の取 引、運転性、活機 効果の体感、確認 性、患者満足の影響、 その他)	家族(社会)のQOL 生物レベルの QOL 生活レベルの QOL その他の QOL	機器コスト系 機器本体コスト、 周辺機器コスト、 その他付属コスト	運用コスト系 労務費、材料費、 経費、その他費用	必要リソース 施設、設備数、 量、薬量、ス タッフ数、消耗 品数量、その他	医療経済学的 分析系 CBA, AEA, AU A, DALY, その他	公的保険上、 自由保険上、 その他	調査条件	結果自身に関するコメント	調査条件	その他					
54	Cardiopulmonary bypass circuit treated with surface-modifying additives: a clinical evaluation of blood compatibility.										10 patients in each group	These preliminary clinical results suggest that SMA inhibits platelet interaction with the biomaterial surface of the CPB circuit. Complement activation assessed by the terminal complement complex is not influenced by SMA. The clinical benefit of this surface-modifying technique has yet to be assessed in a larger		結果自身に関するコメント	調査条件	その他	
55	Inflammatory mediators in adults undergoing cardiopulmonary bypass: companion of centrifugal and roller pumps.										centrifugal group:n=20, control group:n=21	this study confirms the proinflammatory nature induces a greater systemic inflammatory response than use of the standard roller pump					
56	Effect of anticoagulation protocol on outcome in patients undergoing CABG with heparin-bonded cardiopulmonary bypass circuits.										full:n=28, low:n=30	This study definitively demonstrates that, when used appropriately, patients who are treated with HECs and a lower anticoagulation protocol have a lower incidence and magnitude of homologous transfusion and are not at any added risk for clinical, hematologic (thrombin-antithrombin complex and fragment 1.2 measurements) or microscopic (transcranial					
57	A comparative evaluation of the effect of pump type and heparin-coated surfaces on platelets during cardiopulmonary bypass.										61 patients	An advantage of the use of centrifugal pumps and the heparin-coated circuits could not be proven with the present set-up. The results suggest that the benefit of the tested system might depend in the operative procedure and management					

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58	Release of proinflammatory cytokines during pediatric cardiopulmonary bypass: heparin-bonded versus nonbonded oxygenators.	Ashraf S, Tian Y, Cowan D, Entress A, Martin PG, Watterson KG.	Ann Thorac Surg 1997 Dec;64(6):1790-4 9436574	heparin-bonded oxygenator(group H)	>80% of circuit surface area	heart disease		pediatric patients			heparin-bonded oxygenator(group H)		nonbonded oxygenator(group C)				
59	Proinflammatory cytokine release during pediatric cardiopulmonary bypass: influence of centrifugal and roller pumps.	Ashraf SS, Tian Y, Cowan D, Shaikh R, Parsloe M, Martin P, Watterson KG.	J Cardiothorac Vasc Anesth 1997 Oct;11(6):718-22 9327312	Biopump	centrifugal pump	congenital heart disease	complex				centrifugal pump		standard twin roller				
60	Biocompatibility reflected by hemostasis variables during cardiopulmonary bypass using heparin-coated circuits.	Borowiec J, Bagge L, Saldeen T, Thelin S.	Thorac Cardiovasc Surg 1997 Aug;45(4):163-7 9323816	heparin-coated CPB(group H)		coronary artery disease					heparin-coated CPB(group H) in group H, bolus of heparin at the dose of 225IU/kg, and the activated coagulation time(ACT) limit to be 300sec.		noncoated circuits(group C), boluses 300IU/kg and additional doses to maintain ACT.				
61	The relation between pump flow rate and pulsatility on cerebral hemodynamics during pediatric cardiopulmonary bypass.	Chow G, Roberts IG, Edwards AD, Lloyd-Thomas A, Wade A, Elliott MJ, Kirkham FJ.	J Thorac Cardiovasc Surg 1997 Oct;114(4):568-77 9338642	near-infrared spectroscopy	used to determine cerebral blood flow and ventilation					infant	CPB						

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		治療系		療養系						予防系	
題名 サマリー	治療性	根治率・生存率	再発率・予防率	その他の予後リスク	感受性(疾病) 即効性、適用性、薬的性	影響性 免疫性、薬毒性、併発性(合併症)、その他のリスク	機能回復性	病態維持性	健康改善性	健康維持性	
58	Release of proinflammatory cytokines during pediatric cardiopulmonary bypass: heparin-bonded versus nonbonded oxygenators.	Significant levels of tumor necrosis factor- α were not detected in either group. Plasma levels of IL-6 peaked in both groups 2 hours after administration of protamine but remained significantly higher in group C. 24 hours after operation Plasma concentration of IL-8 peaked at similar levels in both groups 30 min. after protamine administration and returned to baseline thereafter. Levels of terminal complement complex and elastase peaked in both groups 30 min. after protamine. Plasma levels of terminal complement complex were significantly higher at the end of CPB and after protamine administration in group C. Elastase levels were significantly higher 2 and 24 hours after CPB in group C. The ventilation time of patients in group									
59	Proinflammatory cytokine release during pediatric cardiopulmonary bypass: influence of centrifugal and roller pumps.	CSF-9 levels in both groups peaked at the end of CPB before returning to baseline at 24 hours:(centrifugal vs roller, median [range], 564(16 to 1136)ng/mL vs 508(0 to 1126)ng/mL). IL-6 in both groups reached its peak levels at 2hours postprotamine(centrifugal vs roller, 208(98 to 411)pg/mL vs 205(60 to 327)pg/mL), before coming back to baseline at 24 hours. Plasma leukocyte elastase and IL-8 reached their maximum level 15 min. after protamine administration(centrifugal vs roller, 215(64 to 375)ng/mL vs 225(62 to 410)ng/mL). the reaction of increase of the von Willebrand factor(vWF), plasminogen activator inhibitor-1(PAI) and tissueplasminogen activator(tPA) was less evident in group H, especially in tPA(H vs C: 135%+-9 vs 241%+-15, p<0.0005). Marginally significant, a higher value of PAI was found in the group C early after CPB onset. Group H showed significantly lower concentrations of circulating complex between elastase and alpha1-antitrypsin at CPB and postoperative(60min. after protamine administration. H vs C cerebral blood flow decreased 38% perL x m(-2) x min(-1) decrease in pump flow rate and was associated with changes in mean arterial pressure but did not differ according to pulsatility. Change in hemoglobin concentration was unrelated to changes in pulsatility of pump flow.									
60	Biocompatibility reflected by haemostasis variables during cardiopulmonary bypass using heparin-coated circuits.										
61	The relation between pump flow rate and pulsatility on cerebral hemodynamics during pediatric cardiopulmonary bypass.										

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	題名 サマリー	親和性(複合技術)	信頼性・安全性			適用性					患者QOL系						
			故障率	安全性	アウトカムの 安定性 (臨床の均一性、 再現性)	その他のリスク ヘッジ能力	操作性	安定性	可搬性	管理性・ 保管性	規格・基準 適用性	人材育成・ト レーニングの 簡便性	生物レベルのQOL (個への対応、身体的影響性、精神 的影響性、生命への影響)	生活レベルの QOL (個への対応性、 生活行動能力への 影響、社会復帰 等、その他)			
58	Release of proinflammatory cytokines during pediatric cardiopulmonary bypass: heparin-bonded versus nonbonded oxygenators.																
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	題名 サマリー	その他のQOL (技術能の発 明・実用性、治療 効果の体感・確認 性、患者満足の影響、 等、その他)	生物レベルの QOL	生活レベルの QOL	生活レベルの QOL	その他の QOL	機器コスト系	運用コスト系	必要リソース 系	医療経済学的 分析系	技術評価 系	結果自身に関するコメント	調査条件	その他
58	Release of proinflammatory cytokines during pediatric cardiopulmonary bypass: heparin-bonded versus nonbonded oxygenators.					the result is achieved without bonding the entire circuit, and this means a cost benefit	機器本体コスト、周辺機器コスト、その他装置コスト	労務費、材料費、経費、その他費用	床数、装置数、重量、経費、スタッフ数、消耗品数、その他	CBA, AEA, AU, DALY, その他	公的保険上、自由保険上、その他	The present study confirms the proinflammatory nature of pediatric operations and demonstrates a lessened systemic inflammatory response with the use of heparin-bonded oxygenators. This is achieved without bonding of the entire circuit, which could have significant cost-benefit implications by negating the need for custom-built heparin-bonded circuitry.	group:n =11, group:C:n =10	
59	Proinflammatory cytokine release during pediatric cardiopulmonary bypass: influence of centrifugal and roller pumps.											the study confirms the proinflammatory nature of pediatric CPB surgery, but failed to show a significant advantage of centrifugal pumping in terms of the inflammatory response	17 patients in each group	
60	Biocompatibility reflected by haemostasis variables during cardiopulmonary bypass using heparin-coated circuits.											it was concluded that the heparin coated CPB circuits demonstrated improved biocompatibility which may be related to less disturbed haemostasis	7 patients in each group	
61	The relation between pump flow rate and pulsatility on cerebral hemodynamics during pediatric cardiopulmonary bypass.											Cerebral blood flow is related to pump flow rate. Pulsatile flow delivered with a Stockert pump does not increase cerebral blood flow or alter hemoglobin concentration during CPB in children	median age 2 months(range 2 weeks to 20years 5 months), 40 children	

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							疾病の 種類	疾病の複 雑性	その他リ スクの程 度	手技・処 置名称 コード	その他併 用療法	対比療法					
62	Heparin coating of extracorporeal circuits inhibits contact activation during cardiac operations.	te Veithuis H, Baufreton C, Jansen PG, Thijs CM, Hack GE, Sturk A, Wildervuur CR, Loianse DY.	J Thorac Cardiovasc Surg 1987 Jul;114(1):17-22 9240301	heparin-coated extracorporeal circuit	Duraflo II	coronary artery disease				heparin-coated extracorporeal circuit							
63	Clinical study of totally roller pumpless cardiopulmonary bypass system.	Murakami F, Usui A, Hiroura M, Kawamura M, Koyama T, Murase M.	Atif Organs 1997 Jul;21(7):803-7 9212963	vacuum suction system with a centrifugal pump	totally roller pumpless CPB system	coronary artery disease				roller pumpless CPB system							
64	Pulsatile and nonpulsatile extracorporeal circulation using Capiox E terumo oxygenator: a comparison study with Ultrox and Maxima membrane oxygenators.	Minami K, Bairaktaris A, Murray E, Weikemper H, Dremburg W, Korfer R.	J Cardiovasc Surg (Torino) 1997 Jun;38(3):227-32 9219471		Capiox E polypropylene fiber membrane oxygenator	coronary artery disease				Capiox E							
65	Comparison of pulsatile versus nonpulsatile perfusion on the postcardiopulmonary bypass aortic-radial artery pressure gradient.	Badner NH, Doyle JA.	J Cardiothorac Vasc Anesth 1997 Jun;11(4):28-31 9187989		pulsatile perfusion(PP)	coronary artery disease				pulsatile perfusion(PP)							
66	Effect of pump flow rate on cerebral blood flow during hypothermic cardiopulmonary bypass in adults.	Cook DJ, Propper JA, Orszulik TA, Daly RC, Oliver WC Jr.	J Cardiothorac Vasc Anesth 1997 Jun;11(4):415-9 9187987			coronary artery disease				CPB flow rates of 2.3 L/min/m2							

情報 NO	基本情報		技術基本能力										
	題名 サマリー	治癒系	治癒性	閉塞 再発率	救命率・生存率	再発率・予防 率	その他の予後リスク	感受性(疾病) 血動性、適用性、機能的性	影響性 乗数性、乗数性、併発 性(合併症)、その他の リスク	機能回復性	病態維持性	健康改善性	予防系
62	Heparin coating of extracorporeal circuits inhibits contact activation during cardiac operations.	治癒性	The generation of kallikrein-C1-inhibitor complexes was reduced by 62%(p=0.06) after onset of the CPB and by 43%(p=0.026) after the cessation of bypass in the heparin group compared with the uncoated group. Generation was reduced by 58%(p=0.06) when the ratio of kallikrein-C1-inhibitor to prekallikrein after onset of bypass was considered. There were significant increases in F1+2 levels in both groups and increases in plasmin-alpha2-antiplasmin complexes in the heparin-coated group at cessation of bypass, but no inter group difference were observed.										
63	Clinical study of totally roller pumpless cardiopulmonary bypass system.	治癒性	Totally roller pumpless CPB reduces hemolysis, showing lower plasma free hemoglobin levels (81.8 +/- 25.0 versus 42.0 +/- 16.3 at 30 min after CPB initiation, p < 0.05), higher plasma haptoglobin levels (37.8 +/- 36.6 versus 77.2 +/- 31.3 at 120 min after CPB, p < 0.05), and lower blood lactate dehydrogenase (LDH) levels (1391 +/- 497 versus 972 +/- 187, p < 0.01) than those of CPB with a roller pump suction with no significant difference between platelet counts.					no significant difference in incubation times between groups					
64	Pulsatile and nonpulsatile extracorporeal circulation using Capiox E terumo oxygenator: a comparison study with Ultrox and Maxima membrane oxygenators.	治癒性	Net fluid input was lower in the Capiox E regardless of the perfusion mode (Capiox E vs Ultrox vs Maxima: 2932 +/- 582 ml vs 3646 +/- 531 ml vs 3593 +/- 582 ml). Net fluid balance (Capiox/NP vs Ultrox/NP vs Maxima/NP: 1288 +/- 534 ml vs 1704 +/- 460 ml vs 1881 +/- 594 ml, p < 0.05), the higher net fluid balance in the Capiox E (1649 +/- 580 ml vs 1592 +/- 583 ml) (Ultrox E/PP) vs 1494 +/- 542 ml (Maxima/PP) was attributed to a technicality whereby the recommended priming volume of the Capiox E was exceeded for safety reasons. The values of the plasma free Hb (Maxima/PP: 80.7/NP: 50.7/PP: 50.7/PP: 62.7/NP: 48.7/PP: 55.7/NP: 48 mg/dl).										
65	Comparison of pulsatile versus nonpulsatile perfusion on the postcardiopulmonary bypass aortic-radial artery pressure gradient.	治癒性	During CPB the PP group had a significantly higher mean pulse pressure measured at the aortic root than the NP group (15.5 +/- 8.1 v 1.7 +/- 2.7, p < 0.0001). The aortic-to-radial-artery gradient within both groups was significantly different after CPB for systolic (SBP), diastolic (DBP), and mean pressure (MAP) (p < 0.0001). There were, however, no statistically significant differences between the PP and NP groups in the aortic-to-radial-artery gradient after CPB for either SBD, DBP, or MAP.						no significant difference between the PP and NP groups				
66	Effect of pump flow rate on cerebral blood flow during hypothermic cardiopulmonary bypass in adults.	治癒性	Brain oxygenation is well maintained at lower than conventional pump flow levels during CPB.										

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		親和性(複合技術)		信頼性・安全性			運用性					患者QOL系					
		他技術との融合性	相乗効果の程度	故障率	安全性	アウトカムの安定性 結果の再現性、再現性	その他のリスク ヘッジ能力	操作性	安定性	可搬性	管理性・ 保管性	規格・基準 適用性	人材育成・ト レーニングの 簡便性	生物レベルのQOL (個への対応、身体的影響性、精神 的影響性、生命への影響)	生活レベルの QOL (個への対応性、 生活行動能力へ の影響、社会環境 等、その他)		
62	Heparin coating of extracorporeal circuits inhibits contact activation during cardiac operations.																
63	Clinical study of totally roller pumpless cardiopulmonary bypass system.																
64	Pulsatile and nonpulsatile extracorporeal circulation using Capiox E terumo oxygenator: a comparison study with Ultrox and Maxima membrane oxygenators.																
65	Comparison of pulsatile versus nonpulsatile perfusion on the postcardiopulmonary bypass aortic-radial artery pressure gradient.																
66	Effect of pump flow rate on cerebral blood flow during hypothermic cardiopulmonary bypass in adults.																

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	題名 サマリー	その他のQOL (技術能力の増 強・理解性・治療 効果の改善・標記 性・機会損失の影 響、その他)	生物レベルの QOL	生活レベルの QOL	その他の QOL	機器コスト系	運用コスト系	必要リソー ス	医療経済学的 分析系	技術評価 系	関連条件	その他
62	Heparin coating of extracorporeal circuits inhibits contact activation during cardiac operations.				その他の QOL	機器本体コスト、 周辺機器コスト、 その他設備コスト	労務費、材料費、 経費、その他費用	施設、設備費 量、技術、ス タッフ数、消耗 品数量、その他	CBA, AEA, AU A, DALY, その他	公的施設上、 自由施設上、 その他	経費自身に関するコメント	15 patients in each group
63	Clinical study of totally roller pumpless cardiopulmonary bypass system.										A totally roller pumpless CPB system provides sufficient biocompatibility for the blood to reduce hemolysis significantly and simplifies and miniaturizes the entire CPB system to achieve good visibility and handling for control as well	roller pumpless group=15 control group=13
64	Pulsatile and nonpulsatile extracorporeal circulation using Capiox E terumo oxygenator: a comparison study with Ultrox and Maxima membrane oxygenators.										the study demonstrated that the Capiox E oxygenator with a single blood pump system can compare to the Maxima and Ultrox oxygenator with a double blood pump for CPB with regard to blood handling, oxygenation and fluid balance in routine cardiac surgery	90 patients
65	Comparison of pulsatile versus nonpulsatile perfusion on the postcardiopulmonary bypass aortic-radial artery pressure gradient.										Pulsatile perfusion had no effect on the aortic root radial artery blood pressure gradient after CPB in elective CABG surgery patients.	80 patients
66	Effect of pump flow rate on cerebral blood flow during hypothermic cardiopulmonary bypass in adults.										Brain oxygenation is well maintained at lower than conventional pump flow levels during CPB. There may be practical advantages to reduced flows during hypothermia, and flow reductions do not appear to adversely affect cerebral blood	30 patients

情報 NO.	基本情報				機器技術				技術適用疾病				技術基本能力					
	題名 サマリー	著者	雑誌名 Medline Index	機器技術名称	製品 情報	疾病名称系			量産度系				適用療法系					
						一般名称 ICD-10分類	疾病の severity	疾病の複 雑性	その他リ スクの程 度	手法・処置名称 コード	その他併用 療法	対比療法	正確 性、確 実性	迅速 性、反 応性	早期診断 性 (予見性・ 予知性)	インテ リジェ ンシー		
67	Conventional haemofiltration during routine coronary bypass surgery.	Babka RM, Petress J, Briggs R, Halsal R, Mack J.	Perfusion 1997 May;12(3):187-92 9226707	COBE 1200 ultrafiltration (group A)		coronary artery disease												
68	Clinical effects of the heparin coated surface in cardiopulmonary bypass.	Svenmarker S, Sandstrom E, Karlsson T, Jansson E, Hagmark S, Lindholm R, Appelblad M, Aberg T.	Eur J Cardiothorac Surg 1997 May;11(5):957-64 9196315	extra-corporeal circuit treated with covalent bonded heparin		coronary heart disease	primary operation											
69	Endothelin-1 and neutrophil activation during heparin-coated cardiopulmonary bypass.	Lundblad R, Moen O, Fosse E.	Ann thorac Surg 1997 May;63(5):1361-7 9146328	Duraflo II and Carmeda BioActive Surface	heparin coated CPB circuit	coronary artery disease	low risk											
70	Serum S-100 protein concentration after cardiac surgery: a randomized trial of arterial line filtration.	Taggart DP, Bhattacharya K, Weston N, Standing SJ, Kay JD, Pillai R, Johnsson P, Westaby S.	Eur J Cardiothorac Surg 1997 Apr;11(4):645-9 9151031	Cobe Sentry	a43 micron heparin coated arterial line filter	coronary artery disease												

情報 NO.	技術基本能力										療養系		予防系	
	題名 サマリー	治癒性	死亡率・生存率	再発率・予防 率	その他の 予後リスク	感受性(疾病) 即効性, 適用性, 継続性	影響性 免疫性, 感受性, 併発 性(合併症), その他の リスク	機能回復性	病態維持性	健康改善性	健康維持性			
67	Conventional haemofiltration during routine coronary bypass surgery.	the mean 24hours postoperative blood loss (group A vs B: 440±192ml vs 451±136ml), the average bank blood transfusion(group A vs B: 0.8±/-1.3units per patients vs 0.75±/-1.5)						postoperative average weight gain(group A vs B: 3.5±/-3.45lb per patient vs 4.8±/-3.7)						
68	Clinical effects of the heparin coated surface in cardiopulmonary bypass.	There were several signs of reduced operative trauma in the study group. Hospital stay was reduced by nearly 1 day (P < 0.05). Time on postoperative ventilatory support was approximately 4 h shorter (P = 0.009). Chest drain blood loss was decreased both at 8 (P = 0.01) and 24 h (P = 0.007) postoperatively. Body temperature was lower after surgery and especially on days 2 (P = 0.03) and 3 (P = 0.01). Perioperative creatinine elevation was significantly reduced (P = 0.03). Neurological deviations were fewer (P = 0.01). Brain function assessment revealed reduced plasma levels of S-100 both at termination of cardiopulmonary bypass (P = 0.008) and 7 h later (P = 0.04). However, no compared with the uncoated circuits, Duraflo attenuated only the lactoferrin levels, Carmeda was associated with lower levels of both endothelin-1, lactoferrin, and myeloperoxidase		neurological deviation were fewer (P=0.01)	chest drain blood loss was decreased both at 8 (P=0.01) and 24h(P=0.007) postoperatively, body temperature was lower after surgery and especially on days2(P=0.03) and 3(P=0.01), perioperative creatine elevation was significantly reduced(P=0.03), S-100 reduced at termination of cardiopulmonary bypass(P=0.008, 0.004), enhanced plasma levels of endothelin-1, lactoferrin, and myeloperoxidase were observed during and after uncoated circuits but this was not associated with clinical side effects			hospital stay was reduced by nearly 1 day (P<0.05), postoperative ventilatory support was approximately 4h shorter(P=0.009)						
69	Endothelin-1 and neutrophil activation during heparin-coated cardiopulmonary bypass.													
70	Serum S-100 protein concentration after cardiac surgery: a randomized trial of control vs filter (14 vs 9), (4 vs 0), (4 vs 0), arterial line filtration.	In the postoperative period 23 of 40 patients(58%) showed elevated S-100 levels. At 1, 5 and 24hour the respective number with elevated S-100 was (control vs filter) (14 vs 9), (4 vs 0), (4 vs 0), (P<0.05). No patient had overt cerebral injury.		no patient had overt cerebral injury										

情報 NO.	基本情報	技術補充能力										技術付帯能力			
		新規性(適合技術)				信頼性・安全性			運用性			患者QOL系			
		他技術との 融合性	相乗効果の 程度	故障率	安全性	アウトカムの 安定性 結果の均一性、 再現性	その他のリスク ヘッジ能力	操作性	安定性	可搬性	管理性・ 保守性	規格・基準 適用性	人材育成・ト レーニングの 簡便性	生物レベルのQOL (即への対応、身体的影響性、精神 的影響性、生命への影響)	生活レベルの QOL (即への対応性、 生活行動能力へ の影響、社会復帰 率、その他)
67	<p>題名 サマリー</p> <p>Conventional haemofiltration during routine coronary bypass surgery.</p>														<p>postoperative average length of stay (group A vs B: 6.4 +/- 1.5 days per patients vs 6.4 +/- 2.1), average of overall patient charges (group A vs B: \$33,796 +/- 8348 per patient vs \$33,041 +/- 8348)</p>
68	<p>Clinical effects of the heparin coated surface in cardiopulmonary bypass.</p>														
69	<p>Endothelin-1 and neutrophil activation during heparin-coated cardiopulmonary bypass.</p>														
70	<p>Serum S-100 protein concentration after cardiac surgery: a randomized trial of arterial line filtration.</p>														

情報 NO.	基本情報				技術補足情報1			技術補足情報2		その他		
	題名 サマリー	その他のGOL (技術能力の改善・理解性・治療効果の持続性・副作用の軽減・その他)	生物レベルの GOL	生活レベルの GOL	その他の GOL	装置コスト系	運用コスト系	必要リソース 施設、設備数、薬、検具、スツップ数、消耗品数、その他	医療経済学的 分析系	技術評価 系	調査条件	その他
67	Conventional haemofiltration during routine coronary bypass surgery.						装置本体コスト、周辺機器コスト、その他装置コスト	労務費、材料費、経費、その他費用	CBA, AEA, AU, A, DALY, その他	公的医療上、自由医療上、その他	30 patients in each group	経費自身に関するコメント routine use of ultrafiltration during coronary artery bypass surgery with CPB offers no improvement in the quality of care nor does it decrease the patient's overall charges
68	Clinical effects of the heparin coated surface in cardiopulmonary bypass.							average of overall patient charges (group A vs B: \$33,796+/- \$348 per patient vs \$33,041+/- \$674)			40 bonded heparin 56 without heparin 59	CPB with covalent bonded heparin attached to the extracorporeal circuit in combination with a reduced systemic heparin dose seems to reduce safely and effectively the operative stress to the patient, and there were signs of improved cerebral protection
69	Endothelin-1 and neutrophil activation during heparin-coated cardiopulmonary bypass.										40 patients	The plasma levels of endothelin-1, lactoferrin, and myeloperoxidase increase during cardiopulmonary bypass in coronary artery bypass grafting, but this has no clinical side effects in low-risk patients. The increase is attenuated using heparin-coated extracorporeal circuits, and then more effectively by Covalent Surface Coated Circuits.
70	Serum S-100 protein concentration after cardiac surgery: a randomized trial of arterial line filtration.										40 patients.	This study suggests that (i) subclinical cerebral injury is common (58% of patients in this study) even after apparently uncomplicated surgery with short CPB times; (ii) serum S-100 protein is a valuable marker for investigating potentially cerebral protective innovations during CPB; and (iii) arterial line filtration significantly

基本情報			機器技術		技術適用疾病		重症度系				適用療法系			技術基本能力		
情報 NO.	題名 サマリー	著者	雑誌名 Medline Index	機器技術名称	製品情報	疾病名称系 一般名称 ICD-10分類	疾病の severity	疾病の複 雑性	その他リ スクの程 度	手技処置名称 コード	その他併用 療法	対照療法	正確 性、確 実性	迅速 性、反 応性	早期診断 性 (予見性・ 予知性)	インテ リジェ ンシー
71	Clinical evaluation of Duraflon II heparin treated extracorporeal circulation circuits (2nd version). The European Working Group on heparin coated extracorporeal circulation circuits.	Wildevuur CR, Jansen PG, Bezemer PD, Kuik DJ, Eijisman L, Bruins P, De Jong AP, Van Hardevelt FW, Biervliet JD, Hasenkamp JM, Kure HH, Knudsen L, Bellaiche L, Ahlburg P, Loisanche DY, Baufretton C, Le Bensnerais P, Bajan G, Matta A, Van Dyck M, Renotte MT, Ponlot-Lois A, Baels P.	Eur J Cardiothorac Surg 1997 Apr;11(4):616-23; discussion 624-5 9151026	Duraflon II	heparin treated CPB circuit	coronary artery disease	low risk			heparin treated CPB circuit		untreated circuit				
72	Release of lipopolysaccharide toxicity-modulating proteins in patients undergoing cardiopulmonary bypass using noncoated and heparin-coated extracorporeal circuits. A clinical pilot study.	Bouma M, Maassen J, Weerwind P, Dentener M, Franssen E, de Jong D, Buijsman W.	Chest 1997 Mar;111(3):577-83 9118690	Duraflon II	heparin coated extracorporeal circuit	coronary artery disease				a heparin coated extracorporeal circuit		noncoated extracorporeal circuits				
73	Duraflon II coating of cardiopulmonary bypass circuits reduces complement activation, but does not affect the release of granulocyte enzymes: a European multicentre study.	Fosse E, Thein S, Svennevig JL, Jansen P, Molnes TE, Hack E, Venge P, Moen O, Brockmeier V, Dregelid E, Halden E, Hagman L, Videm V, Pedersen T, Mohr B.	Eur J Cardiothorac Surg 1997 Feb;11(2):320-7 9080162	Duraflon II	CPB coated with heparin	coronary artery disease				CPB coated with heparin		uncoated circuits				
74	Cardiopulmonary bypass with heparin-coated circuits and reduced systemic anticoagulation.	Kuitunen AH, Heikkilä LJ, Salmenpera MT.	Ann Thorac Surg 1997 Feb;63(2):438-44 9033316	heparon coated CPB circuit		coronary artery disease				heparon coated CPB circuit		uncoated circuits				
75	Attenuation of changes in leukocyte surface markers and complement activation with heparin-coated cardiopulmonary bypass.	Moen O, Hogasen K, Fosse E, Dregelid E, Brockmeier V, Venge P, Harboe M, Molnes TE.	Ann Thorac Surg 1997 Jan;63(1):105-11 8993250	Duraflon II	completely heparin coated	coronary artery disease		low risk		heparin coating		uncoated circuits				

基本情報		技術基本能力											
情報 NO.	題名 サマリー	治療系					療養系					予防系	
		治癒性	死亡率・生存率	再発率・予防率	その他の予後リスク	感受性(疾病) 即効性、適用性、予防性	影響性 依従性、再現性、併発性(合併症)、その他のリスク	機能回復性	病態維持性	健康改善性	健康維持性		
71	Clinical evaluation of Duraflo II heparin treated extracorporeal circulation circuits (2nd version). The European Working Group on heparin coated extracorporeal circulation circuits.	the use of heparin treated circuits revealed no overall changes in blood loss, blood use, time on ventilator, occurrence of adverse events, morbidity, mortality, and intensive care stay, no clinical or technical side effects were reported in both group	the use of heparin treated circuits revealed no overall changes in blood loss, blood use, time on ventilator, occurrence of adverse events, morbidity, mortality, mortality				significant differences were found among participating centers with respect to patient characteristics, blood handling procedures and postoperative care	the use of heparin revealed no changes in intensive care stay					
72	Release of lipopolysaccharide toxicity-modulating proteins in patients undergoing cardiopulmonary bypass using noncoated and heparin-coated extracorporeal circuits. A clinical pilot study.	noncoated group induced a sharp increase in neutrophil-derived bactericidal/permeability-increasing protein(BPI), manifest directly after release of the aortic crossclamp. in the heparin group they were significantly attenuated. In both groups, the acute-phase reactant lipopolysaccharide binding protein(LBP) increased gradually. Noncoated group had a higher release of solubleCD14(sCD14), but not above baseline levels											
73	Duraflo II coating of cardiopulmonary bypass circuits reduces complement activation, but does not affect the release of granulocyte enzymes : a European multicentre study.	a significant increase in C4b was first seen on both groups, (Duraflo vs control; from 86.7+/-12.5 to 273.0+/-277.4nM vs from 86.9+/-18.5 to 320.2+/-190.5), the formation of C4b did not differ significantly between the two groups. C3b concentration increased (from 124.0+/-15.3 to a maximum of 1176.1+/-64.7 increased (from 124.0+/-15.3 to a maximum of 1176.1+/-64.7											
74	Cardiopulmonary bypass with heparin-coated circuits and reduced systemic anticoagulation.	the postoperative overnight loss of hemoglobin through the drains/coated group vs uncoated group, 43.6(18.5-69.0) vs 73.0(32.2-137.7g, p=0.0015), plasma concentration of prothrombin fragment1+2 and D-dimer were significantly more elevated in the coated group.											
75	Attenuation of changes in leukocyte surface markers and complement activation with heparin-coated cardiopulmonary bypass.	clinical and surgical results were similar in both groups, the heparin coated group had a reduce in the formation of the terminal SC5b-9 complement complex, and the counts of circulating leukocytes and platelets were significantly less reduced only initially of CPB. The expression of CR1,CR3,CR4 was significantly less upregulated and the L-selectin significantly less downregulated on											

情報 NO.	基本情報	技術付帯能力													
		技術補完能力		信頼性・安全性				適用性				患者QOL系			
		他技術との 融合性	相乗効果の 程度	故障率	安全性	アウトカムの 安定性 結果の均一性、 再現性	その他のリスク ヘッジ能力	操作性	安定性	可搬性	管理性・ 保管性	規格・基準 適用性	人材育成・ト レーニングの 簡便性	生物レベルのQOL (患への対応、身体的影響性、精神 的影響性、生命への影響)	生活レベルの QOL (患への対応性、 生活行動能力へ の影響、社会復帰 率、その他)
71	<p>題名 サマリー</p> <p>Clinical evaluation of Duraflo II heparin treated extracorporeal circulation circuits (2nd version). The European Working Group on heparin coated extracorporeal circulation circuits.</p>														
72	<p>Release of lipopolysaccharide toxicity-modulating proteins in patients undergoing cardiopulmonary bypass using noncoated and heparin-coated extracorporeal circuits. A clinical pilot study.</p>														
73	<p>Duraflo II coating of cardiopulmonary bypass circuits reduces complement activation, but does not affect the release of granulocyte enzymes: a European multicentre study.</p>														
74	<p>Cardiopulmonary bypass with heparin-coated circuits and reduced systemic anticoagulation.</p>														
75	<p>Attenuation of changes in leukocyte surface markers and complement activation with heparin-coated cardiopulmonary bypass.</p>														

情報 NO.	基本情報				技術補足情報1				技術補足情報2				その他		
	題名 サマリー	その他のQOL (技術能力の改善、 安全性、有効性、 効果の持続、副作用、 調査結果の形態、 等、その他)	家族(社会)のQOL			必要リンク 施設、設備数、 量、規模、 スタッフ数、研修 品数、その他	運用コスト系	医療経済学的 分析系	技術評価 系	機器コスト系	機材コスト、 両刃機器コスト、 その他設置コスト	労務費、材料費、 経費、その他費用	公的保険上 自由保険上、 自由保険上、 その他	調査条件	その他
			生物レベルの QOL	生活レベルの QOL	その他の QOL										
71	Clinical evaluation of Durafllo II heparin treated extracorporeal circulation circuits (2nd version). The European Working Group on heparin coated extracorporeal circulation circuits.												805 patient in 11 Europea heart centers. heparin group:n=398, untreated group:n=407	Improved recovery can be expected with heparin treated circuits in specific higher risk patients(e.g. females) and when prolonged aortic cross clamp time is anticipated. Further investigation are recommended to analyses the clinical benefit of heparin treated circuits in studies with patients in different well defined risk categories and under better standardised circumstances	
72	Release of lipopolysaccharide toxicity-modulating proteins in patients undergoing cardiopulmonary bypass using noncoated and heparin-coated extracorporeal circuits. A clinical pilot study												14patients, 7 each	CPB induced leukocyte activation is attenuated using ab heparin-treated extracorporeal circuit and point to the possible role of lipopolysaccharide(LPS) toxicity-modulating proteins in the systemic inflammatory response after bypass surgery	
73	Durafllo II coating of cardiopulmonary bypass circuits reduces complement activation, but does not affect the release of granulocyte enzymes : a European multicentre study.												Durafllo II group:n=76, uncoated group:n=75	Durafllo II reduces complement activation, particularly ICC of specific neutrophil granule enzymes. No certain correlation was established between complement and granulocyte activation and clinical outcome	
74	Cardiopulmonary bypass with heparin-coated circuits and reduced systemic anticoagulation.												30 patients	generous systematic heparinazation may still be prudent despite the improved biocompatibility offered by heparin-coated surface	
75	Attenuation of changes in leukocyte surface markers and complement activation with heparin-coated cardiopulmonary bypass.												12 patients in each group	heparon coating reduces complement activation and attenuates the leukocyte integrin and selectin response that occurs when uncoated circuits are used	