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Search History:

1. Medline; exp TROPONIN/; 13594 results.
2. Medline; troponin.ti,ab; 17846 results.
3. Medline; 1 OR 2; 20430 results.
4. Medline; pregn*.ti,ab; 401215 results.
5. Medline; exp PREGNANCY/; 784267 results.
6. Medline; (delivery OR labor OR labour).ti,ab; 366862 results.
7. Medline; exp DELIVERY, OBSTETRIC/; 67360 results.
8. Medline; "labor obstetric".af; 27713 results.
9. Medline; 4 OR 5 OR 6 OR 7 OR 8; 1126030 results.
10. Medline; 3 AND 9; 425 results.
11. Medline; (postpartum OR "post partum").ti,ab; 46123 results.
12. Medline; exp POSTPARTUM PERIOD/; 53712 results.
13. Medline; exp PERIPARTUM PERIOD/; 554 results.
14. Medline; (peripartum OR "peri partum").ti,ab; 3295 results.
15. Medline; 11 OR 12 OR 13 OR 14; 87847 results.
16. Medline; 3 AND 15; 32 results.
17. EMBASE; exp TROPONIN/; 38406 results.
18. EMBASE; troponin.ti,ab; 28117 results.
19. EMBASE; 17 OR 18; 40915 results.
20. EMBASE; pregn*.ti,ab; 497234 results.
21. EMBASE; exp PREGNANCY/; 615733 results.
22. EMBASE; (delivery OR labor OR labour).ti,ab; 473191 results.
23. EMBASE; exp PREGNANCY/; 615733 results.

24. EMBASE; exp DELIVERY/; 132624 results.
25. EMBASE; (postpartum OR "post partum").ti,ab; 56846 results.
26. EMBASE; (peripartum OR "peri partum").ti,ab; 4657 results.
27. EMBASE; exp PUERPERIUM/; 48422 results.
28. EMBASE; 20 OR 21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27; 1211780 results.
29. EMBASE; 19 AND 28; 1067 results.
30. EMBASE; (raise* OR rise* OR increas* OR elevat*).ti,ab; 5858704 results.
31. EMBASE; 29 AND 30; 571 results.
32. EMBASE; 31 [Limit to: English Language]; 549 results.
33. EMBASE; *TROPONIN/ [Limit to: English Language]; 2869 results.
34. EMBASE; troponin.ti [Limit to: English Language]; 8996 results.
35. EMBASE; 33 OR 34 [Limit to: English Language]; 9667 results.
36. EMBASE; 28 AND 35 [Limit to: English Language]; 145 results.
37. Medline; (cardiac adj2 overload*).ti,ab; 1401 results.
38. Medline; 3 AND 9 AND 37; 1 results.
39. Medline; 3 AND 9 AND 37; 1 results.
40. EMBASE; exp HEART VENTRICLE OVERLOAD/; 4352 results.
41. EMBASE; 19 AND 28 AND 40; 5 results.
42. Medline; troponin.ti [Limit to: English Language]; 7064 results.
43. Medline; 9 AND 42 [Limit to: English Language]; 107 results.
44. Medline; exp PHYSICAL EXERTION/; 53920 results.
45. Medline; 10 AND 44; 1 results.
46. EMBASE; exertion.ti,ab; 15276 results.
47. EMBASE; 29 AND 46; 4 results.
48. EMBASE; exp DYSPNEA/; 112616 results.
49. EMBASE; 19 AND 28 AND 48; 105 results.
50. EMBASE; exertion.ti; 2812 results.
51. EMBASE; 35 AND 50 [Limit to: English Language]; 1 results.

Effect of pregnancy/labour/delivery on Troponin Levels:

Title: Evaluation of highly sensitive cardiac troponin T levels in women before labour and delivery and in the postpartum period

Citation: European Heart Journal, August 2011, vol./is. 32/(449), 0195-668X (August 2011)

Author(s): Miyajima E., Hirose H., Nakashima M., Fujisawa M., Kutsuwada S., Yajima S., Yonezawa H., Sumita S., Okuda M., Takahashi T.

Language: English

Abstract: Purpose: Although the prevalence of peripartum cardiomyopathy is not high, mild dyspnea on exertion is common in normal pregnancy as well as in pregnancies complicated with preeclampsia or chronic hypertension. Furthermore, we recently observed an increase in the highly sensitive cardiac troponin T (hs-cTnT) levels even before labour/delivery. We examined the hs-cTnT level in pregnant women before labour/delivery, and postpartum-and analyzed its implications. Methods: The study population comprised 133 pregnant women (N-before group: mean (SD) age, 34 (4) years) and 197 postpartum women (N-after group: 34 (5) years) without any cardiovascular complication; and 26 pregnant women (C-before group: 36 (5) years) and 47 postpartum women (C-after group: 35 (5) years) with cardiovascular complications. As non-pregnant control subjects, patients with uncomplicated chronic hypertension (EHT group: 35 (3) years) were also included in the study. The hs-cTnT level was measured by the Elecsys hscTnT assay system (Roche Diagnostics), which meets the precision recommendations of the ESC/ACC guidelines. The limit of detection (LOD) and limit of quantitation (LOQ) were 3 and 12 ng/L for hs-cTnT, respectively. As the control population, in 212 age-matched non-pregnant women the cTnT level was over LOD in 15 (7%) women and the 99 percentile value was 4 ng/L. Results: Since in any subjects, the hs-cTnT level was under LOD, the distribution of the hs-cTnT level in each group is

shown in the figure. (Figure presented) Conclusion: Since the LOQ was higher than the 99 percentile value in these young female populations, many women in the postpartum period showed levels higher than the LOQ. Therefore, we should focus on protecting the maternal heart during and after delivery, specially in women with preeclampsia or chronic hypertension.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Full Text:

Available from *Highwire Press* in [European Heart Journal](#)

Available from *Oxford University Press* in [European Heart Journal](#);

Note: ; Collection notes: To access please select Login with Athens and search and select NHS England as your institution before entering your NHS OpenAthens account details.

Title: Are Maternal Serum Troponin I Levels Affected by Vaginal or Cesarean Delivery?

Citation: American Journal of Perinatology, January 2004, vol./is. 21/1(31-34), 0735-1631 (January 2004)

Author(s): Koscica K.L., Bebbington M., Bernstein P.S.

Language: English

Abstract: Our objective was to describe the change in the level of troponin I in patients who undergo a vaginal or cesarean delivery. We obtained troponin I levels on admission and 1 hour after delivery in women undergoing vaginal and cesarean deliveries. Exclusion criteria included <37 weeks' gestation, a history of cardiac disease, hypertension, or cardiac symptoms. The troponin I level used to

indicate myocardial ischemia was 2.0 ng/mL; levels were analyzed using the Wilcoxon test. The median age of women in the vaginal versus the cesarean group were 25.6 years and 34.4 years, and the median gestational age for both groups was 39.6 weeks. The median troponin I level before and after vaginal delivery was <0.3 ng/mL and before and after cesarean was <0.3 ng/mL. The highest level of troponin I in either group was 0.3 ng/mL. Troponin I is not elevated as a result of undergoing a vaginal or cesarean delivery. We conclude that troponin I may be used as a reliable marker to diagnose myocardial ischemia in postpartum women.

Publication Type: Journal: Article

Source: EMBASE

Title: Maternal cardiac troponin I levels during normal labor and delivery

Citation: American Journal of Obstetrics and Gynecology, 1999, vol./is. 180/1 I(122-127), 0002-9378 (1999)

Author(s): Shiwers S.A., Wians F.H. Jr., Keffer J.H., Ramin S.M.

Language: English

Abstract: OBJECTIVE: Diagnosis of myocardial infarction in pregnant women on the basis of changes in biochemical markers is complicated by the release of some of these markers from noncardiac tissue sources. We compared troponin I levels with those of other markers in normal pregnant women. STUDY DESIGN: In 51 healthy women at term in labor, cardiac troponin I, myoglobin, creatine kinase, and creatine kinase MB levels were determined at admission, during the second stage of labor, and within 30 minutes, 12 hours, and 24 hours after delivery. RESULTS: Mean admission levels for all markers were below the upper limit of normal. Mean

concentrations of myoglobin, creatine kinase, and creatine kinase MB mass were increased nearly twofold within 30 minutes after delivery. The highest level of troponin I (0.134 ng/mL) at all time points was below the cutoff value (0.15 ng/mL) for discriminating myocardial infarction. **CONCLUSIONS:** Because only troponin I levels remained undetectable during and after delivery, it is potentially the most useful biochemical marker for monitoring pregnant women for myocardial injury.

Publication Type: Journal: Article

Source: EMBASE

Title: Increased levels of serum cardiac troponin I and brain natriuretic peptides in women immediately post-delivery

Citation: European Journal of Heart Failure, May 2014, vol./is. 16/(35), 1388-9842 (May 2014)

Author(s): Kimura M., Kato T., Minamino E., Inoko M.

Language: English

Abstract: Backgrounds: Measurement of cardiac troponin and brain natriuretic peptide (BNP) levels is helpful for risk assessment of developing heart failure. However, the data about the pregnant women remains to be elucidated. Aims and Methods: Our aim is to assess levels of serum cardiac troponin I (cTnI), BNP and echocardiographic findings of pregnant women in the third trimester (28-30 weeks gestation) and women after the delivery during peripartum periods. We prospectively enrolled 86 pregnant women of 28-30 weeks gestation and 100 women within 4 days after the delivery in our hospital. Women who had known underlying heart diseases or without consent were excluded. Results: Levels of cTnI in

peripartum women were significantly higher (0.019+/-0.018 mg/ml, mean+/-SD, p=0.002) than that of cTnI in women of 28-30 weeks, which were all below 0.015 ng/ml. BNP levels were as the same as cTnI, 27.4+/-20.9 pg/ml in peripartum women and 12.7+/-12.8 in women of 28-30 weeks (p<0.0001). There was a strong association between cTnI and BNP, BNP and hemoglobin levels, and E/E' and hemoglobin levels. In peripartum women, cTnI and BNP levels were higher in those who used oxytocin to promote delivery. There was no difference in ejection fraction between pregnant women of 28-30 weeks gestation (63.1+/-4.3%) and women after the delivery during peripartum periods (62.2+/-4.0 %). There were no women who met the criteria of peripartum cardiomyopathy. Conclusions: Levels of serum cTnI and BNP in peripartum periods were increased compared to those in women of 28-30 weeks gestation.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Title: Assessment of highly sensitive cardiac troponin levels in pregnant women during gestation period and just before labour

Citation: European Heart Journal, August 2011, vol./is. 32/(588), 0195-668X (August 2011)

Author(s): Miyajima E., Nishijima Y., Hirose H., Kida S., Watanabe M., Tanaka H., Yonezawa H., Okuda M., Takahashi T., Sumita S.

Language: English

Abstract: Purpose: Both gestational hypertension and chronic hypertension during pregnancy could damage the maternal heart. However, the implications of cardiac troponin (cTns) levels in

pregnant women remain controversial. Furthermore, cardiac troponin I (cTnI) or troponin T (cTnT) levels in pregnant women show dissociated responses. Therefore, to elucidate their utility, we measured the highly sensitive cTnI and cTnT levels during pregnancy. Methods: In this study, 200 pregnant women were prospectively enrolled; serum samples of 106 of the 200 women were obtained at enrolment and just before labour/delivery. The cTnI level was measured using the TnI-ultra, whereas the cTnT level was measured using the hs-cTnT. In addition, N-terminal natriuretic peptide (NT-proBNP) level was also measured. The limit of detection (LOD) were 6 ng/L for cTnI and 3 ng/L for cTnT, respectively. The control population comprised 212 age-matched non pregnant women in whom both cTnI and cTnT were measured: the 99 percentile value for both cTnI and cTnT was 4 ng/L; the cTnI level was over LOD in 1 (0.5%) and the cTnT level was over in 15 (7%) women. The eGFR was estimated by using both serum creatinine level and age. Results: Among the 106 subjects, 86 women (Norm group: mean (SD) age, 34.1 (4.6) years) had no cardiovascular complication during the gestational period and just before labour/delivery, whereas 20 women (Comp group: 34.7 (5.9) years) had complications such as preeclampsia or chronic hypertension at both the time points. In the Norm group, the cTnT levels were over LOD in only 5 (6%) women at enrolment and in 23 (27%) women just before labour/delivery. In the Comp group, the corresponding numbers were 6 (30%) and 13 (65%). In the Norm group, the cTnI level was over LOD in 14 (19%) women at enrolment and in 34 women (43%) just before labour/delivery; the corresponding numbers in the Comp group were 4 (25%) and 10 (50%). Although the NT-proBNP level increased with advancing pregnancy in both the groups; however, it was elevated even at the enrolment stage in the Comp group. Similarly, the eGFR decreased with advancing pregnancy in both groups, but it was significantly lower in the Comp group. Furthermore, multiple regression analysis showed that the NT-proBNP level was an independent variable responsible for the levels of cTns. Conclusion: The cTnI and cTnT levels were increased in some pregnant women with cardiovascular

complications as well as in those with no cardiovascular complication; these elevations may be due to cardiac overload during pregnancy, which could be monitored by measuring NT-proBNP levels.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Full Text:

Available from *Highwire Press* in [European Heart Journal](#)

Available from *Oxford University Press* in [European Heart Journal](#);

Note: ; Collection notes: To access please select Login with Athens and search and select NHS England as your institution before entering your NHS OpenAthens account details.

Title: Cardiac ischaemia and troponin rise in a structurally normal heart: Should peri-partum chest pain be more aggressively investigated?

Citation: International Journal of Obstetric Anesthesia, May 2009, vol./is. 18/(S51), 0959-289X (May 2009)

Author(s): Tatham K.C., Hughes-Roberts Y., Davies S.W., Cox M.

Language: English

Abstract: We present a case of chest pain, ECG changes, bradycardia and troponin I rise following twin delivery. Case: A 33-year-old previously healthy primipara presented in labour, 36 weeks into an uneventful twin pregnancy. Hypertension was treated with one dose of labetalol (100 mg i.v.). After a 5 -mL epidural top-up with 2% lidocaine plus bicarbonate and adrenaline, an instrumental delivery was performed in theatre where she received ergometrine and

oxytocin. In the recovery room she became hypertensive again (158/102 mmHg) and complained of central 'heavy' chest pain with a sinus bradycardia of 40-46 beats/min. A 12-lead ECG showed left axis deviation and an inverted T-wave in V₂ that later resolved. She was transferred to the coronary care unit. The troponin I was positive (see table 1). Echocardiogram, spiral CT thorax, MRI thorax and cardiac catheterisation (including optical coherence tomography) were all normal, ruling out pulmonary emboli, aortic/coronary dissection or significant atheroma. The patient was discharged home several days later pain free. Table presented.

Discussion: The clinical presentation and abnormal cardiac enzymes suggest myocardial damage. Further investigations failed to locate the cause. Elevated troponin levels (up to 1 µg/L) in childbirth have been reported in asymptomatic patients with hypertension and proteinuria. In a series of 136 cases of myocardial infarction in pregnancy, half had normal vessels. This points to alternative causes of infarction: perhaps myocardial perfusion/demand mismatch or coronary spasm. Oxytocin can produce chest pain and ischaemic ECG changes. It is possible that a coronary thromboembolic event occurred, and the patient is awaiting a gadolinium-enhanced cardiac MR and bubble echo study to detect myocardial damage, ongoing silent ischaemia or intracardiac shunt. Anecdotal evidence suggests anaesthetists often discount transient chest pain with ECG changes during childbirth. As cardiac ischaemia may be more common than is currently appreciated, ischaemic symptoms may warrant the same investigations as in other patients.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Title: Abnormal troponin I levels during pregnancy without acute coronary syndrome and without hypertensive disorders.

Citation: International journal of cardiology, Aug 2008, vol. 128, no. 2, p. e47., 1874-1754 (August 18, 2008)

Author(s): Patanè, Salvatore, Marte, Filippo, Di Bella, Gianluca, Davi', Maria

Source: Medline

Title: A cautionary tale--false-positive troponin I in pregnancy.

Citation: QJM : monthly journal of the Association of Physicians, May 2011, vol. 104, no. 5, p. 439-440, 1460-2393 (May 2011)

Author(s): Petrie, C J, Weir, R A P, Reid, A, Rodgers, J, Brady, A J

Source: Medline

Full Text:

Available from *Highwire Press* in [QJM](#)

Available from *Oxford University Press* in [QJM: An International Journal of Medicine](#); Note: ; Collection notes: To access please select Login with Athens and search and select NHS England as your institution before entering your NHS OpenAthens account details.

[Conditions/factors associated with elevated Troponin in pregnancy/delivery:](#)

Title: Factors associated with increased levels of serum cardiac troponin during the peripartum period

Citation: European Heart Journal, August 2015, vol./is. 36/(499-500), 0195-668X (01 Aug 2015)

Author(s): Okano M., Kato T., Miyata A., Nagano T., Inoko M.

Language: English

Abstract: Background: Elevated cardiac troponin level can help predict cardiac events not only in patients with myocardial infarction but also in those with heart failure or in a healthy screening population. Peripartum cardiomyopathy is a rare but devastating disease that develops during pregnancy and after delivery; however, the associated data in pregnancy women are unclear. In the present study, we aimed to clarify the sequential changes in cardiac troponin I (cTnI) levels, brain natriuretic peptide (BNP) levels, and cardiac function during pregnancy and after delivery. Methods: We sequentially assessed 463 consecutive Japanese pregnant women during the third trimester (28-30 weeks' gestation) and within four days after delivery (postpartum) in our hospital during 2013. Women with underlying heart disease or those who did not provide consent were excluded. Results: The characteristics of the participants were as follows: mean age, 33.1 \pm 4.9 years; age of >35 years, 18.2%; pregnancy-induced hypertension (PIH), 4.5%; oxytocin use, 31.9%; delivery by caesarean section, 17.2%; and mean hemoglobin levels during the third trimester and after delivery, 11.1 \pm 1.0 and 10.1 \pm 1.4, respectively. Ejection fraction did not change between the third trimester and after delivery. cTnI levels in peripartum women were significantly higher (0.019 \pm 0.03 ng/mL; $p=0.002$) as compared to those in women at 28-30 weeks' gestation (<0.015 ng/mL). Similarly, BNP levels were significantly higher in peripartum women (29.5 \pm 23.2 pg/mL) than in women at 28-30 weeks' gestation (16.8 \pm 12.5 pg/mL; $p<0.0001$). Moreover, BNP levels were strongly associated

with anemia after delivery. In multivariate analysis, the factors affecting elevated cTnI levels were PIH (odds ratio [OR]: 5.04, 95% confidence interval [CI]: 1.23-18.5, $p=0.025$), malposition of the placenta (OR: 5.60, 95% CI: 1.47-19.4, $p=0.012$), oxytocin use (OR: 2.91, 95% CI: 1.16-7.64, $p=0.021$), and anemia after delivery (OR: 2.01 per 1 g/dL decrease, 95% CI: 1.006-2.714, $p<0.0001$). None of the women met the criteria for peripartum cardiomyopathy. Conclusion: Serum cTnI and BNP levels in the peripartum period were increased as compared to those at 28-30 weeks' gestation. Moreover, the factors affecting elevated cTnI levels, which are potential predictors of cardiac events, were identified in Japanese pregnant women.

Publication Type: Journal: Conference Abstract

Source: EMBASE

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Available from *Oxford University Press* in [European Heart Journal](#);

Note: ; Collection notes: To access please select Login with Athens and search and select NHS England as your institution before entering your NHS OpenAthens account details.

Title: Increased troponin levels in nonischemic cardiac conditions and noncardiac diseases

Citation: Journal of Interventional Cardiology, April 2008, vol./is. 21/2(129-139), 0896-4327;1540-8183 (April 2008)

Author(s): De Gennaro L., Brunetti N.D., Cuculo A., Pellegrino P.L., Izzo P., Roma F., Di Biase M.

Language: English

Abstract: Elevated cardiac troponin levels often lead to a diagnosis of acute coronary syndrome (ACS). However, this finding may occur also in other conditions, both nonischemic and noncardiovascular, leading to an incorrect diagnosis of ACS and, sometimes, invasive tests. We describe various cardiovascular diseases other than ACS (heart failure, pulmonary embolism, etc.) and noncardiovascular diseases (renal failure, etc.) that may cause elevated troponin levels and give possible explanations and prognostic relevance for this rise. © 2008, the Authors.

Publication Type: Journal: Article

Source: EMBASE

Full Text:

Available from *John Wiley and Sons* in [Journal of Interventional Cardiology](#)

Available from *John Wiley and Sons* in [Journal of Interventional Cardiology](#)

Title: Troponin I and D-Dimer levels in preeclampsia and eclampsia: Prospective study

Citation: Clinical and Experimental Obstetrics and Gynecology, 2015, vol./is. 42/1(26-31), 0390-6663 (2015)

Author(s): Bozkurt M., Yumru A.E., Sahin L., Salman S.

Language: English

Abstract: Objective: The aim of this study was to evaluate serum cardiac troponin I and D-Dimer (D-Di) levels in preeclampsia (PE),

eclampsia (E), and normotensive healthy pregnant women in third trimester in order to define their diagnostic value. **Materials and Methods:** The study group consisted of 42 preeclamptic patients and 16 eclamptic patient; 108 healthy normotensive pregnant women in third trimester who were chosen from outpatients clinic and examined regularly used as a control group. Serum cardiac troponin I and D-Di levels were measured using an immunoassay. **Results:** The average levels of troponin I were 0.0134 +/- 0.0091, 0.017 +/- 0.0085, 0.180 +/- 0.136 in control group, preeclamptic, and eclamptic patients, respectively. The levels of troponin in eclamptic patients were statistically higher than the normotensive and preeclamptic group ($p = 0.016$, $p = 0.014$). There were no differences in terms of troponin I level between preeclamptic group and normotensive pregnant women in third trimester ($p = 0.089$). The average D-Di levels were 634 +/- 228 ng/ml, 1426 +/- 430 ng/ml, 2067 +/- 580 ng/ml in control group, preeclamptic, and eclamptic patients, respectively. The levels of D-Di in preeclamptic and eclamptic patients were found significantly higher than the control groups ($p = 0.034$, $p = 0.020$). **Conclusion:** Serum troponin I levels increased in eclamptic patient because of myocardial damage. An increased level of troponin was not detected in preeclamptic patients. However; D-Di level increased in preeclamptic and eclamptic patients.

Publication Type: Journal: Article

Source: EMBASE

Title: False positive troponin levels due to heterophil antibodies in a pregnant woman

Citation: Turkiye Acil Tip Dergisi, 2015, vol./is. 15/1(47-50), 1304-7361 (2015)

Author(s): Kaplan A., Orhan N., Ilhan E.

Language: English

Abstract: Positive troponin test results in peripheral blood can be detected either during myocardial injury or from falsely positive test results. In this report, we present the positive results of a troponin test in a 24-year-old pregnant woman referred to the emergency department with atypical chest pain, and the clinical algorithm that we used to make the correct diagnosis. This patient presented with the same complaint of chest pain at different times while positive troponin levels were detected. In the absence of signs of myocardial injury, we suspected that heterophil antibodies were playing a major role. Further examinations revealed heterophil antibodies that could cross react with the troponin tests in peripheral blood.

Publication Type: Journal: Article

Source: EMBASE

Title: Inverse takotsubo cardiomyopathy in the peripartum period

Citation: Anaesthesia, October 2014, vol./is. 69/(28), 0003-2409 (October 2014)

Author(s): Krishnan R., Das S.

Language: English

Abstract: Takotsubo cardiomyopathy (TCM), also known as broken heart syndrome, is a stress induced cardiomyopathy, thought to be caused by excessive catecholamine release due to acute medical illness or emotional or physical stress. The word takotsubo is a Japanese word meaning 'octopus pot', which is used to trap an octopus. This pot resembles the shape of the left ventricle during

imaging which shows apical ballooning, left ventricular akinesia or hypokinesia combined with basal hypercontractility. Inverse TCM is a variant of TCM with similar pathophysiology but with different presenting symptoms and reverse features on imaging i.e. basal hypokinesia. TCM and its inverse variant were first reported in the Japanese literature and its awareness in the Western population is more recent. Description A 29-year-old female patient presented for an emergency lower segment caesarean section (LSCS) which was conducted under spinal anaesthesia. During the LSCS and in the immediate postoperative period she complained of chest pain. There was no clinical evidence of pulmonary oedema. Upon investigation, she was found to have ECG changes suggestive of non-ST elevation myocardial infarction with positive results for troponin I. Hence, she was initially treated as a case of acute coronary syndrome. However, a subsequent coronary angiogram showed no obstruction or spasm of the coronary arteries while an echocardiogram showed a left ventricular ejection fraction of $< 25\%$ with basal hypokinesia. Further evaluation with cardiac magnetic resonance imaging, with gadolinium, showed characteristic absence of delayed gadolinium hyperenhancement with hypokinesia of the basal segments. Hence, a diagnosis of inverse TCM was made and the patient was treated appropriately. Discussion TCM is treated with aspirin, b-blockers, angiotensin converting enzyme inhibitors and diuretics, with recovery of left ventricular function typically occurring in 2- 4 weeks. As TCM is caused by catecholamine overload, the use of inotropes and vasopressors can cause haemodynamic instability. Patients who present with persistent hypotension may be evaluated by echocardiography for an intra-cavitary pressure gradient. If a dynamic intraventricular pressure gradient is detected, inotropic drug therapy should be discontinued and intravenous b-blockers administered to increase diastolic filling time and left ventricular end-diastolic volume. The aim of reporting this case was to raise awareness of TCM and its inverse variant in the general population and in the obstetric population in particular.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Full Text:

Available from *John Wiley and Sons* in [Anaesthesia](#)

Title: Postpartum woman with pneumomediastinum and reverse (inverted) takotsubo cardiomyopathy: A case report

Citation: Journal of Medical Case Reports, March 2014, vol./is. 8/1(no pagination), 1752-1947 (05 Mar 2014)

Author(s): Nagel S.N., Deutschmann M., Lopatta E., Lichtenauer M., Teichgraber U.K.M.

Language: English

Abstract: Introduction. Pneumomediastinum is known to occur during labor. Patients typically present with chest pain and symptoms may be suspicious, for example of pulmonary embolism or aortic dissection. The condition itself, however, is rather harmless and self-limiting. Takotsubo cardiomyopathy is associated with psychologically or physiologically stressful events and its symptoms mimic myocardial infarction. Yet, symptoms often improve quickly as the initially impaired cardiac function is usually restored within days or weeks. Although the initial presentation of the patient in this case report was dramatic, the clinical course was positive and the patient could be quickly dismissed in a good general condition. To the best of our knowledge, no presentation of a combined occurrence of postpartum pneumomediastinum and reverse (inverted) takotsubo cardiomyopathy exists. Case presentation. We present the case of a 30-year-old Caucasian woman with sudden onset of thoracic back and chest pain approximately 24 hours after an otherwise

unremarkable vaginal delivery. A contrast-enhanced chest computed tomography showed cervical and mediastinal emphysema without proof for pulmonary embolism or aortic dissection. She received a symptomatic analgesic treatment and was dismissed to the obstetrics department for monitoring. Within hours, slightly increased levels of troponin I were observed without corresponding electrocardiography changes. Immediate cardiac catheterization and a cardiovascular magnetic resonance imaging (performed within 24 hours) revealed basal to midventricular hypokinesia, but were otherwise unremarkable. A low-dose treatment for congestive heart failure was initiated, under which symptoms subsided within days. She was dismissed after 12 days in a good general condition. Conclusions: Although the clinical presentation of the combination of the diseases initially was dramatic, the prognosis is positive. In the context of the preceding delivery, knowledge about the postpartum pneumomediastinum lets the radiologist of the emergency department quickly make this diagnosis. The takotsubo cardiomyopathy, however, needs broader diagnostics to not miss intervention-requiring causes. © 2014 Nagel et al.; licensee BioMed Central Ltd.

Publication Type: Journal: Article

Source: EMBASE

Full Text:

Available from *BioMed Central* in [Journal of Medical Case Reports](#)

Available from *National Library of Medicine* in [Journal of Medical Case Reports](#)

Available from *National Library of Medicine* in [Journal of Medical Case Reports](#)

Title: A rare cause of postpartum chest pain.

Citation: The West Virginia medical journal, Sep 2013, vol. 109, no. 5, p. 14-16, 0043-3284 (2013 Sep-Oct)

Author(s): Jain, Sumesh, Chen, Bruce, Moreland, Jason A

Abstract: We report the case of a 45-year-old postpartum female at low risk for coronary artery disease (CAD) who presented with chest pain, a normal electrocardiogram (ECG) and elevation of serial troponin-T levels. Coronary angiography revealed dissection of the first obtuse marginal branch of the left circumflex coronary artery. The patient was treated medically and discharged home safely. Spontaneous coronary artery dissection (SCAD) is a rare condition. In the absence of CAD, it is seen most frequently in young females during the peripartum period. Insult from the hemodynamic stresses during pregnancy and labor combined with the underlying pregnancy related arterial wall changes is the proposed mechanism of dissection in this setting. The normal ECG in the presence of an acute myocardial infarction (AMI) in this case also demonstrates the occasional electrically silent ECG that can occur during acute compromise of the left circumflex coronary artery.

Source: Medline

Full Text:

Available from *Free Access Content* in [West Virginia Medical Journal](#)

Title: Is Tako-tsubo syndrome in the postpartum period a clinical entity different from peripartum cardiomyopathy?

Citation: Journal of Cardiovascular Medicine, August 2013, vol./is. 14/8(568-575), 1558-2027;1558-2035 (August 2013)

Author(s): Citro R., Giudice R., Mirra M., Petta R., Baldi C., Bossone E., Piscione F.

Language: English

Abstract: AIMS: To conduct a systematic review of case reports about Tako-tsubo syndrome (TTS) after delivery in order to assess whether TTS in the postpartum period is a peculiar entity or only a variant form of peripartum cardiomyopathy. METHODS: We performed a systematic literature search on the occurrence of TTS after Cesarean section or spontaneous delivery using the scientific literature databases Medline, EMBASE and the Cochrane library. We selected 14 case reports in English. Primary/elective cesarean section or spontaneous delivery; absence of preexisting cardiovascular disease or fetal malformations; identification of diagnostic criteria for TTS; onset of TTS symptoms after delivery were the inclusion criteria. RESULTS: Fifteen cases were selected. Cesarean section 24h before the onset of TTS was reported in 13. All patients presented dyspnea or chest pain. The majority had mild troponin elevation, non-ST-segment elevation. Apical ballooning was observed in 60% of cases, midventricular ballooning in 33%, basal ballooning in 7%. Although 13 patients experienced acute cardiac complications (pulmonary edema, cardiogenic shock, cardiac arrest), in all left ventricular systolic function normalized within 13.43+/-10.96 days. CONCLUSION: Women in the postpartum period, notably after Cesarean delivery, may represent another new vulnerable group at increased risk for TTS. TTS in the postpartum period should be considered a clinical entity different from peripartum cardiomyopathy with specific clinical, therapeutic and prognostic implications. © 2013 Italian Federation of Cardiology.

Publication Type: Journal: Review

Source: EMBASE

Full Text:

Available from *Ovid* in [Journal of Cardiovascular Medicine](#)

Title: Cocaine-induced postpartum coronary artery dissection: a case report and 80-year review of literature.

Citation: The Journal of invasive cardiology, Aug 2013, vol. 25, no. 8, p. E163., 1557-2501 (August 2013)

Author(s): Katikaneni, Pavan K, Akkus, Nuri I, Tandon, Neeraj, Modi, Kalgi

Abstract: The incidence of cocaine-induced myocardial infarction (MI) in pregnancy is unknown. During the peripartum period, cocaine-abusing women are highly susceptible to MI caused by the effect of cocaine on a heart that is already stressed by hemodynamic changes of pregnancy. MI is an infrequent event during pregnancy and the peripartum period, with an estimated rate of 1 in 16,000 patients. Spontaneous coronary artery dissection (SCAD) can account for up to 27% of pregnancy-related MIs. We describe a case of MI diagnosed by increased troponin I levels in a postpartum patient with recent crack cocaine use in the setting of SCAD that required percutaneous coronary intervention of the left anterior descending and diagonal arteries. We also provide a comprehensive review of published literature related to this clinical entity.

Source: Medline

Title: Tako-tsubo syndrome in a young woman after caesarean delivery

Citation: Giornale Italiano di Cardiologia, May 2012, vol./is. 13/5 SUPPL. 2(92S-93S), 1827-6806 (May 2012)

Author(s): Citro R., Giudice R., Mirra M., Baldi C., Bottiglieri G., Ravera A., Farina R., Di Benedetto G., Bossone E., Piscione F.

Language: English

Abstract: A 24-year-old multiparous Caucasian woman at 38 weeks of gestation without cardiovascular risk factors had a cesarean section delivery under spinal anesthesia. A few hours after delivery of a healthy boy, the patient complained of severe shortness of breath and palpitations. Tachycardia, hypotension, hypoxemia and acidosis were documented and clinical signs of acute heart failure were detected. ECG revealed ST-segment depression of 1 mm in DII, DIII e aVF and a slight ST-segment elevation in V1-V3. Laboratory tests revealed elevated troponin I (11 ng/ml; n.v. 0.00-0.10 ng/ml) and myoglobin (400 ng/ml; n.v. 10-92 ng/ml). Computed tomography angiography excluded pulmonary embolism. Owing to worsening of dyspnea and oxygen saturation, mechanical ventilation support was applied after endotracheal intubation. Transthoracic echocardiography (TTE) showed severe reduction of left ventricular systolic function, EF 30%, severe hypokinesis of the mid and basal segments of the anterior, posterior and lateral walls, with preserved contractility of the apical segments. An urgent coronary angiography showed normal coronary arteries. Left ventriculography confirmed "midventricular ballooning". The patient received inotropic agents and IABP was placed and removed after 2 days due to hemodynamic improvement. TTE performed on day 5 showed complete recovery of myocardial contractility (LVEF 70%). After 10 days, the ECG was normal, and the patient was discharged in stable clinical conditions on ramipril (2.5 mg/day) and bisoprolol (1.25 mg/day). At 6-month followup, she was in good health, ECG and TTE findings were unchanged, and ramipril administration was discontinued. We describe a case of variant form of tako-tsubo syndrome (TTS) with midventricular ballooning complicated by cardiogenic shock occurring in a young women after cesarean delivery. TTS in the postpartum period should be considered a peculiar entity with specific clinical, therapeutic and prognostic implications.

Publication Type: Journal: Conference Abstract

Source: EMBASE

Title: Peripartum cardiomyopathy: a review.

Citation: Texas Heart Institute journal / from the Texas Heart Institute of St. Luke's Episcopal Hospital, Texas Children's Hospital, Jan 2012, vol. 39, no. 1, p. 8-16, 1526-6702 (2012)

Author(s): Bhattacharyya, Anirban, Basra, Sukhdeep Singh, Sen, Priyanka, Kar, Biswajit

Abstract: Peripartum cardiomyopathy is idiopathic heart failure occurring in the absence of any determinable heart disease during the last month of pregnancy or the first 5 months postpartum. The incidence varies worldwide but is high in developing nations; the cause of the disease might be a combination of environmental and genetic factors. Diagnostic echocardiographic criteria include left ventricular ejection fraction <0.45 or M-mode fractional shortening $<30\%$ (or both) and end-diastolic dimension >2.7 cm/m². Electrocardiography, magnetic resonance imaging, endomyocardial biopsy, and cardiac catheterization aid in the diagnosis and management of peripartum cardiomyopathy. Cardiac protein assays can also be useful, as suggested by reports of high levels of NT-proBNP, cardiac troponin, tumor necrosis factor- α , interleukin-6, interferon- γ , and C-reactive protein in peripartum cardiomyopathy. The prevalence of mutations associated with familial dilated-cardiomyopathy genes in patients with peripartum cardiomyopathy suggests an overlap in the clinical spectrum of these 2 diseases. Treatment for peripartum cardiomyopathy includes conventional pharmacologic heart-failure therapies-principally diuretics, angiotensin-converting enzyme inhibitors, vasodilators, digoxin, β -blockers, anticoagulants, and peripartum cardiomyopathy-targeted therapies. Therapeutic decisions are influenced by drug-

safety profiles during pregnancy and lactation. Mechanical support and transplantation might be necessary in severe cases. Targeted therapies (such as intravenous immunoglobulin, pentoxifylline, and bromocriptine) have shown promise in small trials but require further evaluation. Fortunately, despite a mortality rate of up to 10% and a high risk of relapse in subsequent pregnancies, many patients with peripartum cardiomyopathy recover within 3 to 6 months of disease onset.

Source: Medline

Full Text:

Available from *National Library of Medicine* in [Texas Heart Institute Journal](#)

Available from *National Library of Medicine* in [Texas Heart Institute Journal](#)

Title: Peripartum cardiac chest pain and troponin rise

Citation: International Journal of Obstetric Anesthesia, October 2010, vol./is. 19/4(453-455), 0959-289X (October 2010)

Author(s): Tatham K., Hughes-Roberts Y., Davies S., Johnson M., Ashpole K., Cox M.

Language: English

Abstract: The incidence of myocardial ischaemia is increasing in the obstetric population. This has been attributed to several factors including greater maternal age, the increasing incidence of obesity and diabetes, and the growing population of patients with grown-up congenital heart disease who now reach adulthood and become pregnant. A number of cases of myocardial ischaemia in pregnant women have been documented, during and after delivery, for which no cause has been established. We present a case of a nulliparous

woman who developed cardiac chest pain, bradycardia, hypertension and a raised troponin I after vaginal delivery of twin boys at 36 weeks of gestation. Ischaemic electrocardiogram changes were noted. Detailed investigations demonstrated a normal coronary circulation. A patent foramen ovale was found on bubble echocardiography. © 2010 Elsevier Ltd. All rights reserved.

Publication Type: Journal: Article

Source: EMBASE

Title: Cardiac troponins and oxidative stress markers in non-pregnant, pregnant and preeclampsia women.

Citation: Bangladesh Medical Research Council bulletin, Apr 2010, vol. 36, no. 1, p. 4-9, 0377-9238 (April 2010)

Author(s): Pasupathi, Palanisamy, Manivannan, Uma, Manivannan, Perisamy, Deepa, Mathiyalagan

Abstract: Free radicals play an important role in the pathogenesis of tissue damage in many clinical disorders, including atherosclerosis. This study was to investigate lipids and oxidative stress markers among women with 50 healthy non-pregnant compare with 50 healthy pregnant and 50 pregnancy-induced hypertensive subjects and correlate with cardiac troponin I (cTnI) and troponin T (cTnT). The level of plasma thiobarbituric acid reactive substances (TBARS), cTnI and cTnT levels significantly increase in pregnancy-induced hypertension compare with other groups. The level of lipids significantly altered in pregnancy-induced hypertension. Conversely, the activities of both enzymatic and non-enzymatic antioxidants were significantly decreased in pregnancy-induced hypertension compared to nonpregnant and healthy pregnant. Our data suggest that there is an imbalance between lipoperoxidation and

antioxidants levels during pregnancy and preeclampsia. Serum cTnI and cTnT are elevated in women with pregnancy-induced hypertension indicating some degree of cardiac myofibrillar damage and cardiac dysfunction.

Source: Medline

Full Text:

Available from *Free Access Content* in [Bangladesh Medical Research Council Bulletin](#)

Title: Troponin I and homocysteine levels in mild and severe preeclampsia

Citation: Clinical and Experimental Obstetrics and Gynecology, 2010, vol./is. 37/1(21-23), 0390-6663 (2010)

Author(s): Atis A., Aydin Y., Basol E., Goker N.

Language: English

Abstract: Objective: To investigate troponin I and homocysteine in pregnant women with severe and mild preeclampsia. Methods: 43 women with mild and 22 women with severe preeclampsia, and 34 healthy pregnant women were included in the study. Homocysteine and troponin levels of the three groups were measured at admission and compared. Results: Mean troponin I levels were 0.005 ng/ml, 0.0116 ng/ml and 0.007 ng/ml in healthy pregnant women and mild and severe preeclampsia, respectively. These results were similar among the three groups. Homocysteine levels were similar in the mild and severe preeclampsia groups and significantly higher than in healthy pregnant women. Conclusions: Troponin I levels are not significantly increased in either mild and severe preeclampsia. Homocysteine increases in preeclampsia, but the severity of preeclampsia is not correlated with homocysteine levels.

Publication Type: Journal: Article

Source: EMBASE

Title: Peripartum cardiomyopathy: a current review.

Citation: Journal of pregnancy, Jan 2010, vol. 2010, p. 149127., 2090-2735 (2010)

Author(s): Twomley, Katie M, Wells, Gretchen L

Abstract: Peripartum cardiomyopathy (PPCM) is a rare but potentially lethal complication of pregnancy occurring in approximately 1 : 3,000 live births in the United States although some series report a much higher incidence. African-American women are particularly at risk. Diagnosis requires symptoms of heart failure in the last month of pregnancy or within five months of delivery in the absence of recognized cardiac disease prior to pregnancy as well as objective evidence of left ventricular systolic dysfunction. This paper provides an updated, comprehensive review of PPCM, including emerging insights into the etiology of this disorder as well as current treatment options.

Source: Medline

Full Text:

Available from *National Library of Medicine* in [Journal of Pregnancy](#)

Title: Cardiac troponin levels in pregnant women with severe pre-eclampsia.

Citation: Journal of obstetrics and gynaecology : the journal of the Institute of Obstetrics and Gynaecology, Oct 2009, vol. 29, no. 7, p. 621-623, 1364-6893 (October 2009)

Author(s): Aydin, C, Baloglu, A, Cetinkaya, B, Yavuzcan, A

Abstract: Pre-eclampsia is a multisystem disorder that involves vascular endothelial dysfunction and diffuse inflammatory response. The cardiac troponin (cTn-I) levels in pre-eclampsia are controversial. The objective of this study was to compare the cTn-I levels between normal pregnant women and those with severe pre-eclampsia. A total of 78 patients who underwent caesarean section were included in the study. The patients were assigned into two groups as the severe pre-eclamptic pregnant group (study group, n = 36) and normotensive pregnant group (control group, n = 42). The cTn-I levels of all patients were measured preoperatively and postoperatively. A statistically significant difference was not determined between the preoperative and postoperative cTn-I levels ($p > 0.05$) between the two groups. In the present study, a relation was not determined between pre-eclampsia and increased cTn-I levels. If high cTn-I levels are determined in pre-eclamptic patients, other pathologies that may cause myocardial damage should be investigated.

Source: Medline

Full Text:

Available from *Taylor & Francis* in [Journal of Obstetrics and Gynaecology](#)

Title: Cardiac troponin and skeletal muscle oxygenation in severe post-partum haemorrhage

Citation: Critical care (London, England), 2009, vol./is. 13 Suppl 5/(S8), 1466-609X (2009)

Author(s): Heyer L., Mebazaa A., Gayat E., Resche-Rigon M., Rabuel C., Rezlan E., Lukaszewicz A.C., Madadaki C., Pirracchio R., Schurando P., Morel O., Fargeaudou Y., Payen D.

Language: English

Abstract: INTRODUCTION: Cardiac troponin has been shown to be elevated in one-half of the parturients admitted for post-partum haemorrhage. The purpose of the study was to assess whether increased cardiac troponin was associated with a simultaneous alteration in haemoglobin tissue oxygen saturation in peripheral muscles in post-partum haemorrhage. METHODS: Tissue haemoglobin oxygen saturation of the thenar eminence muscle (StO₂) was measured via near-infrared spectroscopy technology. Two sets of StO₂ parameters (both isolated baseline and during forearm ischaemia-reperfusion tests) were collected at two time points: upon intensive care unit admission and prior to intensive care unit discharge. Comparisons were performed using Wilcoxon paired tests, and univariate associations were assessed using logistic regression model and Wald tests. RESULTS: The 42 studied parturients, admitted for post-partum haemorrhage, had clinical and biological signs of severe blood loss. Initial cardiac troponin I was increased in 24/42 parturients (0.43 +/- 0.60 microg/l). All measured parameters of muscular haemoglobin oxygen saturation, including Srecovery, were also altered at admission and improved together with improved haemodynamics, when bleeding was controlled. Multivariate analysis showed that muscular Srecovery <3%/second at admission was strongly associated with increased cardiac troponin. CONCLUSIONS: Our study confirmed the high incidence of increased cardiac troponin, and demonstrated the simultaneous impairment in the reserve of oxygen delivery to peripheral muscles in parturients admitted for severe post-partum haemorrhage.

Publication Type: Journal: Article

Source: EMBASE

Full Text:

Available from *National Library of Medicine* in [Critical Care](#)

Available from *Free Access Content* in [Critical Care](#)

Available from *National Library of Medicine* in [Critical Care](#)

Title: Cardiac troponin I elevation after orogenital sex during pregnancy.

Citation: *Obstetrics and gynecology*, Feb 2008, vol. 111, no. 2 Pt 2, p. 487-489, 0029-7844 (February 2008)

Author(s): Sánchez, José Mauricio, Milam, Michael R, Tomlinson, Tracy M, Beardslee, Michael A

Abstract: Venous air embolism due to orogenital sex in pregnancy is an uncommon clinical event. A previously healthy, 29-week pregnant woman presented to the emergency room unconscious 1 hour after engaging in orogenital sex with her partner. The cardiology service was consulted due to troponin elevation. Assessment was that the patient had likely suffered an air embolism with associated troponin leak. Although a rare clinical event, air embolism from air insufflation of the vagina can result in troponin elevation and should be considered in the differential diagnosis in pregnant patients with a history of orogenital sex.

Source: Medline

Full Text:

Available from *Obstetrics and Gynecology* in [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#)

Available from *Ovid* in [Obstetrics and Gynecology](#)

Title: Troponin I levels in patients with preeclampsia.

Citation: The American journal of medicine, Sep 2007, vol. 120, no. 9, p. 819.e13, 1555-7162 (September 2007)

Author(s): Joyal, Dominique, Leya, Ferdinand, Koh, Megan, Besinger, Richard, Ramana, Ravi, Kahn, Steven, Jeske, Walter, Lewis, Bruce, Steen, Lowell, Mestril, Ruben, Arab, Dinesh

Abstract: Preeclampsia involves a diffuse inflammatory state and elevated levels of troponins in patients with preeclampsia have been anecdotally reported. It is, however, unknown whether it is attributable to the preeclampsia. We sought to determine the troponin I levels at the time of delivery in pregnant women with and without preeclampsia. Plasma samples were obtained at the time of delivery and serum troponin I was measured by ELISA method. Thirty-nine women were included (20 with preeclampsia and 19 without). Mean troponin I level was 0.008 ng/mL in patients with preeclampsia and 0.01 ng/mL in controls ($P = .59$). The highest troponin I level was 0.04 ng/mL for both patients with and without preeclampsia. Preeclampsia was not associated with a rise in troponin I levels in our study. Patients with preeclampsia and elevated troponin levels should have further cardiac investigations.

Source: Medline

Full Text:

Available from *American Journal of Medicine* in [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#)

Title: Alteration and significance of serum cardiac troponin I and cystatin C in preeclampsia.

Citation: Clinica chimica acta; international journal of clinical chemistry, Dec 2006, vol. 374, no. 1-2, p. 168-169, 0009-8981 (December 2006)

Author(s): Yang, Xiaofu, Wang, Hanzhi, Wang, Zhengping, Dong, Minyue

Source: Medline

Title: Raised cardiac troponins: troponin is raised in pre-eclampsia.

Citation: BMJ (Clinical research ed.), Jul 2004, vol. 329, no. 7457, p. 111., 1756-1833 (July 10, 2004)

Author(s): Morton, Adam

Source: Medline

Full Text:

Available from *British Medical Journal (BMJ)* in [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#)
Available from *Highwire Press* in [The BMJ](#)

Title: Elevation of cardiac troponin I indicates more than myocardial ischemia

Citation: Clinical and Investigative Medicine, June 2003, vol./is. 26/3(133-147), 0147-958X (June 2003)

Author(s): Higgins J.P., Higgins J.A.

Language: English

Abstract: Elevated cardiac troponin I (cTnI) levels in patients hospitalized with chest pain often lead to a diagnosis of acute myocardial infarction (MI) or unstable angina. However, as we describe in this review, this finding may occur in other conditions, leading to an incorrect diagnosis and other, sometimes invasive, tests. We review briefly cTnI, its release and detection. We describe the various conditions that may cause an elevated cTnI level and give possible explanations for these findings, and we offer some guidelines for diagnosis in patients with an elevated cTnI.

Publication Type: Journal: Review

Source: EMBASE

Full Text:

Available from *Free Access Content* in [Clinical and Investigative Medicine](#)

Available from *ProQuest* in [Clinical and Investigative Medicine](#)

Title: Myocardial ischaemia in normal patients undergoing elective Caesarean section: a peripartum assessment.

Citation: Anaesthesia, Nov 2001, vol. 56, no. 11, p. 1051-1058, 0003-2409 (November 2001)

Author(s): Moran, C, Ni Bhuinneain, M, Geary, M, Cunningham, S, McKenna, P, Gardiner, J

Abstract: Incidence rates of electrocardiographic changes during Caesarean section vary from 25 to 60%. To date, no investigator has identified myocardial ischaemia resulting from these changes. We investigated patients undergoing elective Caesarean section using peripartum Holter monitoring and serum analysis of cardiac troponin I (cTnI). Twenty-six patients presenting for elective Caesarean section were studied. Peroperative Holter monitoring continued for 12 h

postoperatively, at which time blood samples for cTnI levels were taken. Significant ST changes were recorded in 42% of patients peroperatively and 38.5% of patients postoperatively. Forty-two per cent of patients experienced peroperative chest pain requiring opioid analgesia. Chest pain was significantly associated with abnormal electrocardiogram (ECG) findings. Ischaemic levels of cTnI were recorded in two patients. This study reports, for the first time, myocardial ischaemia (7.69% of patients) arising in conjunction with the ECG changes seen during elective Caesarean section. We also report episodes of significant postoperative ST-segment changes.

Source: Medline

Full Text:

Available from *John Wiley and Sons* in [Anaesthesia](#)

Available from *John Wiley and Sons* in [Anaesthesia](#)

Title: Crack cocaine, myocardial infarction, and troponin I levels at the time of cesarean delivery.

Citation: Anesthesia and analgesia, Oct 2000, vol. 91, no. 4, p. 913, 0003-2999 (October 2000)

Author(s): Livingston, J C, Mabie, B C, Ramanathan, J

Abstract: During the peripartum period, cocaine-abusing women are highly susceptible to myocardial infarction. This report describes a case of myocardial infarction diagnosed by increased troponin I levels in a pregnant patient with a history of recent crack cocaine use and severe preeclampsia.

Source: Medline

Full Text:

Available from *Ovid* in [Anesthesia and Analgesia](#)

Title: Cardiac troponin I in pre-eclampsia and gestational hypertension

Citation: British Journal of Obstetrics and Gynaecology, 2000, vol./is. 107/11(1417-1420), 0306-5456 (2000)

Author(s): Fleming S.M., O'Gorman T., Finn J., Grimes H., Daly K., Morrison J.J.

Language: English

Abstract: Objective To investigate serum cardiac troponin I, a sensitive marker of cardiac myocyte damage, in normal pregnancy and pregnancies complicated by hypertension with and without significant proteinuria. Design Prospective cross sectional study. Setting University hospital delivery suite. Sample Serum samples obtained from women in normal pregnancy and in pregnancies complicated by hypertension with and without significant proteinuria. Method Women with hypertension in pregnancy (at least two readings of systolic blood pressure > 140 mmHg and diastolic blood pressure > 90 mmHg) (n = 26) and normotensive women (n = 43) were included in the study. Serum cardiac troponin I was measured using Beckman Access immunoassay. Main outcome measure Serum cardiac troponin I level in the pregnancies complicated by hypertension (with and without significant proteinuria) compared with the levels measured in normotensive women. Results The median serum cardiac troponin I level in pregnancies complicated by hypertension was 0.118 ng/mL (n = 26) which was significantly greater than that measured in samples obtained from normotensive women in pregnancy (0.03 ng/mL; n = 43) (P < 0.0001). There were higher median serum cardiac troponin I levels in hypertensive women with significant proteinuria (0.155 ng/mL; n = 6), compared with those without proteinuria (0.089 ng/mL; n = 20; P = 0.03). Conclusion Serum cardiac troponin I is

elevated in women with hypertensive disorders of pregnancy indicating some degree of cardiac myofibrillary damage in these disorders.

Publication Type: Journal: Article

Source: EMBASE

Full Text:

Available from *British Journal of Obstetrics and Gynaecology* in [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#)

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