MedCrave
Step into the World of Research

MOJ Women's Health

Research Article

Open Access

CrossMark

Post - caesarean section pyrexia and its relation of rupture of membranes and prophylactic antibiotics

Abstract

Objectives: To determine the incidence of pyrexia among patients following Caesarean section and to detect any difference in the incidence among patients who underwent elective sections and those who has emergency sections. To investigate the relation between the occurrence of pyrexia following Caesarean section, and pre-operative rupture of membranes, and the use of prophylactic antibiotics.

Design: A retrospective review of the case notes of 200 patients half of whom underwent an elective caesarean section, and the other half of whom had an emergency caesarean section.

Setting: The maternity unit of a Medium Sized Private Hospital.

Volume 2 Issue 3 - 2016

Ahmed Abdel Haq
Al -Azhar University, Consultant Obstetrician Gynecologist, Egypt

Correspondence: Ahmed Abdel Haq, Consultant Obstetrician Gynecologist, Al -Azhar University, Al Galaa Street Assiut, Egypt, Tel 00201013332656, Email aam_nasr@yahoo.com

Received: June 23, 2016 | **Published:** August 05, 2016

Introduction

The maternity unit of the Universal Hospital comprises 24beds. The total number of deliveries and the number of Caesarean section in the last two years were as follows: The medical team comprises Six Obstetricians and four resident medical officers Table 1.

Table 1 The total number of deliveries and the number of Caesarean section in the last two years

Year	Deliveries	Caesarean	Percentage
2014	376	202	
2015	816	327	

Subjects and methods

Pyrexia: It was taken as an oral temperature of 38°C or higher on any two days in the post operative period prior to discharge. Transient pyrexia (<37.9°C) in the first 24hours, in a patient who has been in established labour, was not considered as a case of pyrexia since it might have been associated with the activity of labour. Patients who developed fever for any length of time, including the first 24hours, for which they were treated with antibiotics, were included in the study. Patients who developed persistent low grade fever were also included.

Patients who reported back to the hospital with what appeared to be operation-related pyrexia were included in the study, as well as those patients with non-operation related puerperal pyrexia (e.g. breast abscess). Cases in the latter group were highlighted. Patients who had preoperative pyrexia, for any reason and to any degree, were excluded from the study.

Rupture of Membranes: It was considered confirmed where the patient had been in labour and has had a vaginal examination which confirmed the absence of membranes, or where the liquor was seen to be draining out of the cervix on speculum examination in cases of preterm rupture of membranes. Preoperative ultrasound finding of decreased liquor and/or the perioperative finding of reduced liquor were rarely required to confirm rupture of membranes. Three cases (out of 240) were not included in the study because rupture of membranes was not documented clearly in their charts.

Antibiotics: The prophylactic antibiotics most commonly used in our unit are Table 2.

These drugs are given in one of the following regimes:

A. Single dose of A.

B. Single dose of both A and B.

C. Three doses (in 24hours) of both A and B at 8hourly intervals.

D. Six doses (in 48hours) of A and B at 8hourly interval.

E. 5–Day's course of both A and B.

Table 2 The prophylactic antibiotics most commonly used in our unit

A	Augmentin	1.2gr	intravenously
B	Metronidazole	500mg	by intravenous infusion

The first dose is given in theatre after the cord is clamped. Patients allergic to Augment in were given Erythromycin as a substitute. Patients who were on pre-operative antibiotic therapy for any reason (e.g. preterm spontaneous rupture of membranes) were excluded from the study. All cases of Caesarean sections were reviewed starting 31st of March 2016 and retrospectively analysed to include 100cases of emergency sections and 100cases of elective sections. We reviewed the first 129 available notes of the most recent cases of emergency sections (29cases did not qualify for the study), as well as the first 111 available notes of the most recent cases of elective sections (11 cases did not qualify) cases were treated in this hospital between 23rd June 2014 and 31st March 2016. No maternal mortality was reported in the case studied, and no serious complications were encountered. Two patients from the emergency group (APH) required blood transfusion preoperatively.

Results

Emergency caesarean section

In our study group of Emergency Caesarean section the incidence of

i. Postoperative pyrexia was-27%

ii. Preoperative rupture of membranes-93%

iii. Prophylactic antibiotics-71%

Of a hundred patients who underwent an emergency Caesarean section for various indications, and who qualified for the study, twenty seven developed post-operative pyrexia (Figures 1-4) and (Tables 3A-3C). Twenty four of these had ruptured membranes, out of which only five were given prophylactic antibiotics.

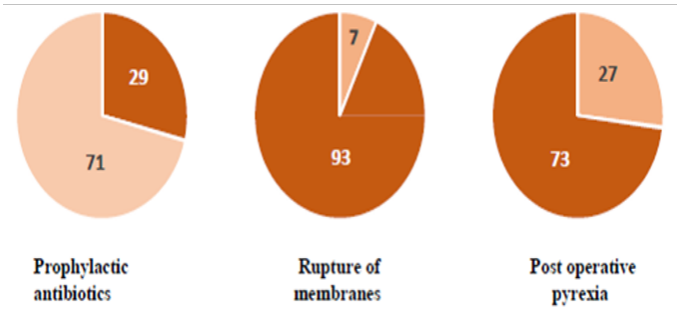

Figure 1 In the study group of emergency C–section.

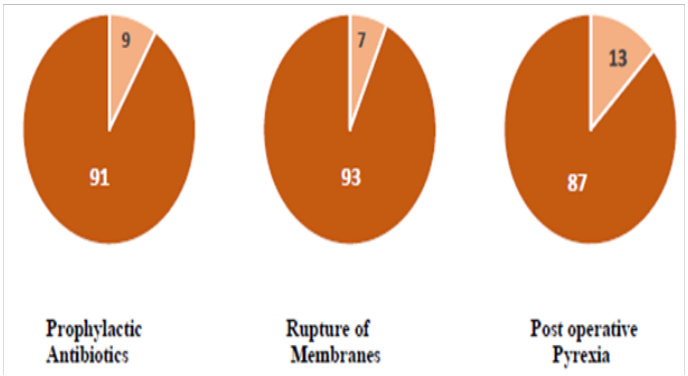

Figure 2 In the study group of elective C–section.

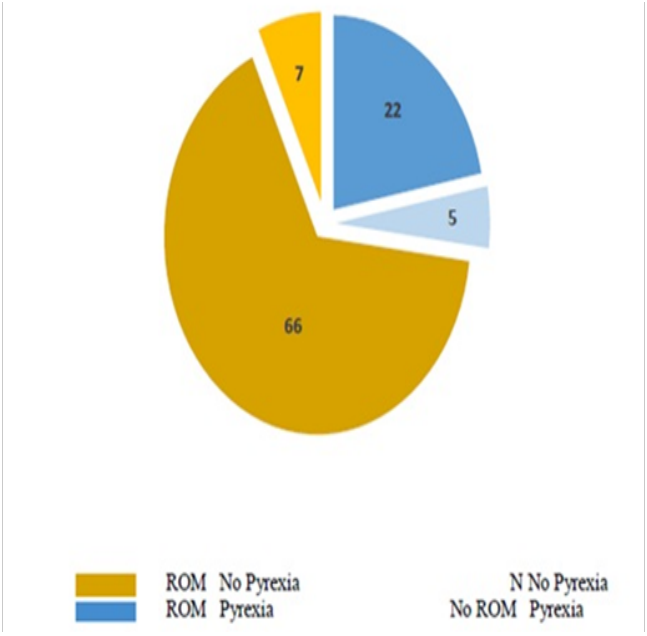

Figure 3 Emergency LSCS- Pyrexia in patients with pre-op rupture of membranes.

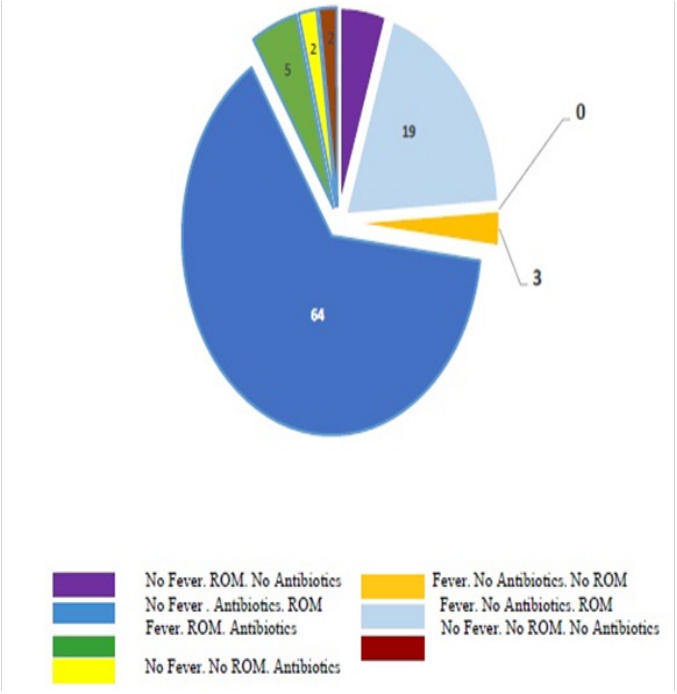

Figure 4 Emergency LSCS- Pyrexia in patients who had prophylactic antibiotics.

Seventy three patients (73%) did not develop fever postoperatively, of these sixty six were given prophylactic antibiotics, including sixty four with ruptured membranes. On the other hand, and looking at the same population from a different angle, out of the sixty nine patients who had ruptured membranes and did not develop fever, sixty four were given prophylactic antibiotics.

Although the length of time since the membranes were ruptured is important and significant in the occurrence of post Caesarean section pyrexia, is difficult to statistically relate this factor to the other factors mentioned above. Sixty nine patients, out of ninety three with preoperative rupture of membranes, were given antibiotics. Of those only five developed fever. This was in contrast to nineteen patients developing pyrexia out of twenty four patients who were not given antibiotics. Only seven patients were taken to theatre for an emergency Caesarean section with intact membranes, three of them with fulminating pregnancy included hypertension, and two for antepartum haemorrhage, ad two with previous caesarean sections with uterine contractions. The two patients with APH were given prophylactic antibiotics and neither developed pyrexia postoperatively, but three of the remaining five had postoperative fever.

On the other hand, and looking at the same population from a different angle, post-operative pyrexia was reported into only five patients out of seventy one who were given prophylactic antibiotics, while the remaining sixty six patients (92%) did not develop fever in spite of the fact that almost all of them (64patients) had ruptured membranes, whereas antibiotics were not given to twenty four patients with ruptured membranes with the result that nineteen patients developed post-operative pyrexia. Antibiotics were not given to five patients with intact membranes, yet three of the five patients developed fever postoperatively Figure 5.

Citation: Haq AA. Post - caesarean section pyrexia and its relation of rupture of membranes and prophylactic antibiotics. *MOJ Women's Health.* 2016;2(3):74–78. DOI: 10.15406/mojwh.2016.02.00032

Table 3A Emergency caesarean section- postoperative pyrexia-27%

Fever 27	Antibiotics 5	ROM	5
		No ROM	-
	No antibiotics 22	ROM	19
		No ROM	3
Fever 27	ROM 24	Antibiotics	5
		No antibiotics	19
	No ROM 3	Antibiotics	-
		No antibiotics	3
No Fever 73	Antibiotics 66	ROM	64
		No ROM	2
	No antibiotics 7	ROM	5
		No ROM	2
No Fever 73	ROM 69	Antibiotics	64
		No antibiotics	5
	No ROM 4	Antibiotics	2
		No antibiotics	2

Table 3B Emergency caesarean section- preoperative rupture of membranes-93%

ROM 93	Antibiotics 69	Fever	5
		No Fever	64
	No antibiotics 24	Fever	19
		No Fever	3
ROM 93	Fever 24	Antibiotics	5
		No antibiotics	19
	No Fever 69	Antibiotics	64
		No antibiotics	5
No ROM 7	Antibiotics 2	Fever	-
		No Fever	2
	No antibiotics 5	Fever	3
		No Fever	2
No ROM 7	Fever 3	Antibiotics	-
		No antibiotics	3
	No Fever 4	Antibiotics	2
		No antibiotics	2

Table 3C Emergency caesarean section- prophylactic antibiotics-71%

Antibiotics 71	Fever 5	ROM	5
		No ROM	-
	No fever 66	ROM	64
		No ROM	2
Antibiotics 71	ROM 69	Fever	5
		No fever	64
	No ROM 2	Fever	-
		No fever	2
No antibiotics 29	Fever 22	ROM	19
		No ROM	3
	No fever 7	ROM	5
		No ROM	2
No antibiotics 29	ROM 24	Fever	19
		No fever	5
	No ROM 5	Fever	3
		No fever	2

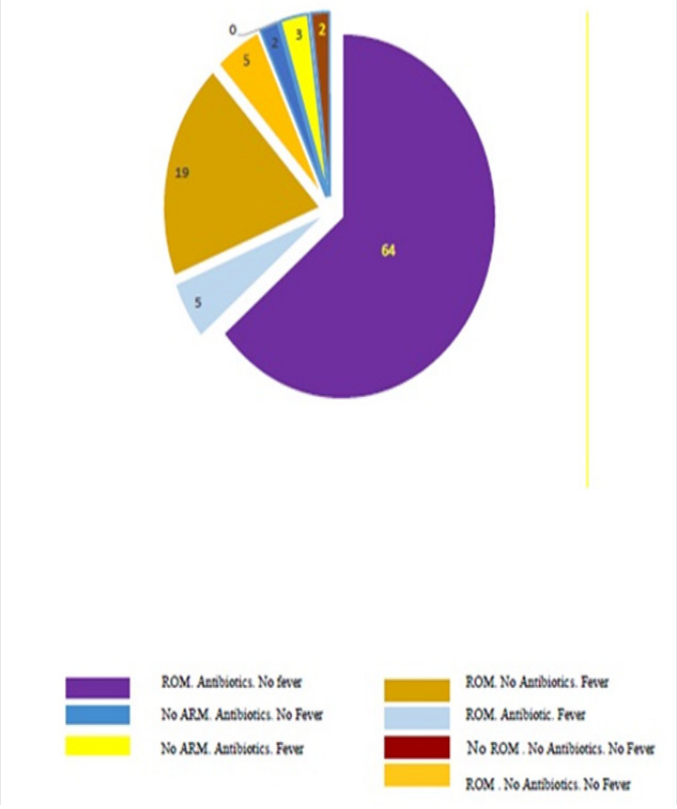

Figure 5 Emergency LSCS- pyrexia in patients who had prophylactic antibiotics.

Elective caesarean section

In our study group of Elective Caesarean section the incidence of

i. Postoperative pyrexia was-13%

Citation: Haq AA. Post - caesarean section pyrexia and its relation of rupture of membranes and prophylactic antibiotics. *MOJ Women's Health.* 2016;2(3):74–78. DOI: 10.15406/mojwh.2016.02.00032

ii. Preoperative rupture of membranes-7%

iii. Prophylactic antibiotics-9%

Of the hundred patients who underwent an elective Caesarean section for various indications, and who qualified for the study, thirteen patients developed postoperative pyrexia, three of them with ruptured membranes. None of the thirteen had prophylactic antibiotics. The majority of patients in this group did not develop fever, in spite of the fact that only nine patients were given antibiotics including three with ruptured membranes.

The incidence of ruptured membranes in elective sections seems high (7%). We found that four of these patients had spontaneous rupture of membranes before 30 week and were not in labour. They were kept in hospital for observation and enhancement of fetal lung maturity with exogenous steroids. The remaining three, through near team, were not in labour and they were delivered by section in the next theatre list. The seven patients had different indications for abdominal delivery, e.g. Primi breech, CPD, previous sections, elderly primi., bad obstetrical history,… etc. None of the seven patients, who have rupture of membranes, had postoperative pyrexia when prophylactic antibiotics were given, while three patients, out of the four who did not receive antibiotics, developed fever postoperatively. The finding is similar to that among the emergency section group where the majority of patients with preop rupture of membranes developed postop pyrexia. None of the patients who were given prophylactic antibiotics in this group developed fever, and none of those who developed pyrexia had prophylactic antibiotics. Rupture of membranes in this group seems to play much smaller role than the role of the antibiotics (Figures 6) (Figure7) (Tables 4A-4C).

Figure 6 Incidence of Pyrexia in patients with preoperative rupture of membranes: (A) With prophylactic Antibiotics.(B)Without prophylactic Antibiotics.

Causes of pyrexia in the study group

The regimen of prophylactic antibiotics bears a close relationship to the development of post caesarean pyrexia, with the majority of the patients having had a single dose of antibiotics. None of the patients who had a 5-day course of antibiotics developed fever postoperatively. The relation between antibiotic regimen and pyrexia in our group was analyzed without reference to other factors. A total of forty patients in the two study groups (200 patients) developed pyrexia, thirty five of them had no antibiotics, four had a single dose of one patient had six doses of antibiotics but still developed a urinary tract infection which was treated later with a different antibiotic.

Out of the eighty patients who received antibiotics prophylactically, only five patients developed fever. All the five had a single dose of prophylactic antibiotics. A further closer look into the relation between the antibiotic regime, duration of rupture of membranes and the cause of the fever needs to be taken. In our study group, there were two patients who developed low grade fever for which the only positive finding was breast engorgement. Neither of them had prophylactic antibiotics.

Table 4A Elective caesarean section- postoperative pyrexia-13%

Fever 13	Antibiotics -	ROM	-
		No ROM	-
	No antibiotics 13	ROM	3
		No ROM	10
Fever 13	ROM 3	Antibiotics	-
		No antibiotics	3
	No ROM 10	Antibiotics	-
		No antibiotics	10
No Fever 87	Antibiotics 9	ROM	3
		No ROM	6
	No antibiotics 78	ROM	1
		No ROM	77
No Fever 87	ROM 4	Antibiotics	3
		No antibiotics	1
	No ROM 83	Antibiotics	6
		No antibiotics	77

Table 4B Elective caesarean section- preoperative rupture of membranes-7%

ROM 7	Antibiotics 3	Fever	-
		No Fever	3
	No antibiotics 4	Fever	3
		No Fever	1
ROM 7	Fever 3	Antibiotics	-
		No antibiotics	3
	No Fever 4	Antibiotics	3
		No antibiotics	1
No ROM 93	Antibiotics 6	Fever	-
		No Fever	6
	No antibiotics 87	Fever	10
		No Fever	77
No ROM 93	Fever 10	Antibiotics	-
		No antibiotics	10
	No Fever 83	Antibiotics	6
		No antibiotics	77

Citation: Haq AA. Post - caesarean section pyrexia and its relation of rupture of membranes and prophylactic antibiotics. *MOJ Women's Health.* 2016;2(3):74–78. DOI: 10.15406/mojwh.2016.02.00032

Table 4C Elective caesarean section- prophylactic antibiotics-9%

Antibiotics 9	Fever -	ROM	-
		No ROM	-
	No fever 9	ROM	3
		No ROM	6
Antibiotics 9	ROM 3	Fever	-
		No fever	3
	No ROM 6	Fever	-
		No fever	6
No antibiotics 91	Fever 13	ROM	3
		No ROM	10
	No fever 78	ROM	1
		No ROM	77
No antibiotics 91	ROM 4	Fever	3
		No fever	1
	No ROM 87	Fever	10
		No fever	77

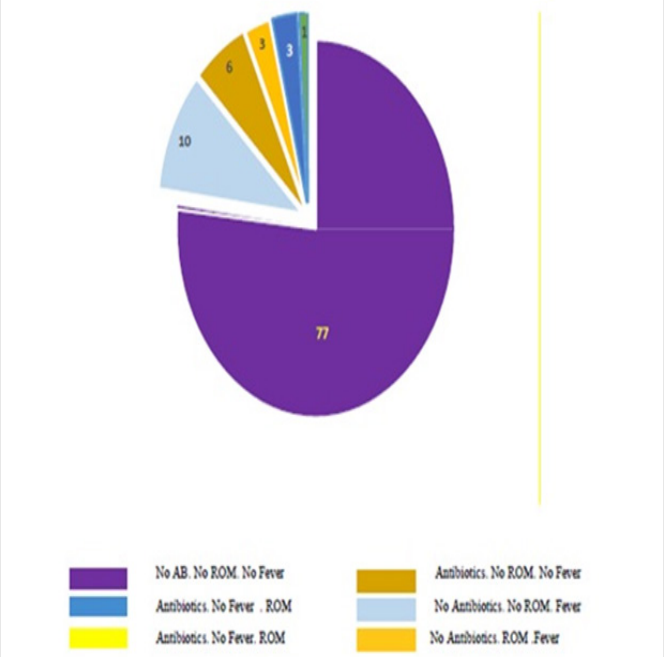

Figure 7 Elective LSCS - antibiotics prophylaxis & ROM & fever.

Urinary tract infection was the commonest identified cause of pyrexia in our study group with twelve patients testing positive. Out of the twelve only one had prophylactic antibiotics. Three patients developed upper respiratory tract infection; none of them had prophylactic antibiotics. The diagnosis was clinical. Six patients developed abdominal wound infection; two of them had a marked inflammation and wound dehiscence, while the remaining four had some slight in duration and redness of the wound. Two of the six patients had prophylactic antibiotics. One patient presented four weeks following Caesarean section with severe lower abdominal pain. She was operated upon by general surgeons for suspected acute appendicitis, but she was found to have acute salpingitis. She had no preoperative prophylactic antibiotics. In the largest group of patients who developed pyrexia (22 out of 40) no cause could be found. Only two of them had prophylactic antibiotics.

Acknowledgements

None.

Conflict of interest

The author declares no conflict of interest.

Citation: Haq AA. Post - caesarean section pyrexia and its relation of rupture of membranes and prophylactic antibiotics. *MOJ Women's Health.* 2016;2(3):74–78. DOI: 10.15406/mojwh.2016.02.00032