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LISTERIA SPECIES IN SOME CASES ASSOCIATED WITH GYNAECOLOGICAL PROBLEMS IN WOMEN

(With 2 Tables and 1 Figure)

By

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مدى تواجد ميكروب الليستيريا فى بعض السيدات اللاتى يعانين من مشاكل انجابية وإجهاض

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يعتبر ميكروب الليستيريا أحد مسببات الاجهاض ومشاكل العقم بين السيدات. تم جمع عدد (٦٠) عينة مهبلية من سيدات يعانين من اجهاض مهدد أو اجهاض متكرر من المترددات على قسم أمراض النساء والولادة بالمستشفى الجامعى بأسيوط والمترددات على عيادات أمراض النساء والولادة بأسيوط . وبفحص العينات بكتريولوجيا وجد أن نسبة تواجد ميكروب الليستيريا فى هذه الحالات كان ٨,٣% ، اثنتان (٣.٣%) من خمس حالات يعانين من وجود ميكروب الليستيريا مونوسيتوجين وثلاث سيدات (٥%) إيجابيين للأنواع الأخرى من ميكروب الليستيريا . وتتضمن البحث فى جداوله مختصر عن التاريخ المرضى لهذه الحالات الخمس وقد نوقشت المخاطر التى تؤثر على الصحة الانجابية للمرأة وكذلك الطرق التى يجب اتباعها لمنع الاصابة بهذا الميكروب .

SUMMARY

A total of 60 vaginal swabs were collected from women suffering form habitual abortions and gynaecological problems at Assiut University Hospitals and examined for the presence of listeria species. The overall recovery rate of listeria from the vaginal discharges amounted 8.3%. The recovery rates of listeria monocytogenes and other listeria species amounted to 3.3% (two cases) and 5% (3 cases) respectively. A summary of clinical information about these incidents were illusterated. The public health hazards of listeriosis in women and the suggestive measures were discussed.

Key words: *Women – Gynaecological Problems - Listeria*

INTRODUCTION

Under normal circumstances, several persons could be infected with *Listeria monocytogenes*, however many of them may remain symptomless. Infection of the pregnant woman leads to infection of her fetus either via the transplacental route or during delivery. Transplacental infection and direct acquisition from the vaginal canal are thought to cause perenatal infections (Schlech et al., 1983). Most cases of listeriosis in the fetus occur after the fifth month of pregnancy, but some have recovered before the fourth month. Upon recovery, the mother may carry *L. monocytogenes* in the genital tract for sometime, and this may cause a problem for the subsequent pregnancy (Seeliger, 1961). Also, she may continue excreting *Listeria monocytogenes* in the faeces for a variable time.

Congenital infection of the fetus is induced either by hematogenic spread via the placenta or through an ascending infection from the vagina and cervix into the uterine cavity. The fetus may becomes infected either by ingestion or aspiration of the amminotic fluid. Moreover, listeria may also be harboured in the genital tract of both sexes for relatively long periods of time (Seeliger & Finger, 1983). Overt listeriosis during pregnancy (mostly observed during the end of 2nd and 3rd trimester) is generally manifested by an acute febrile course with chills, lower back pain and a headache for few days or weeks before abortion or delivery. Listeriosis in pregnant women may result in late abortion, still-birth, or premature delivery associated with variable clinical symptoms in the neonates, mostly sepsis and pneumonia.

Although listeriosis is a disease common to animals and man, an obvious epidemiological relationship between them is very rare and the disease could not be considered a true zoonosis. *Listeria monocytogenes* occurs ubiquitously in man, animals and the environment, and exhibits many of the characteristics of a saprophyte. It has even been suggested (Maupas et al., 1975) that listeriosis should be categoried as a "sapronis". The aim of the work reported herein was to investigate the occurrence of listeria species in vaginal secretions of women suffering habitual abortion.

MATERIAL and METHODS

Samples:

A total of 60 women with a history of repeated abortions attending the antenatal clinic and inpatients section in the department of Obstetrics & Gynecology at Assiut University Hospitals. A questionaire regarding the age, the time of abortion, handling of raw meat, ingestion of raw milk or raw eggs or insufficient cooked meat was filled out for every case. Duplicate swabs of the vaginal secretions were taken, immersed directly into sterile test tubes containing 9 ml trypticase soya broth and transferred in a cold chamber to the laboratory.

Media:

The cold enrichment procedure (Gray & Killinger, 1966) as well as the selective enrichment method (Curtis et al., 1989) were carried out. Subculturing of the broth was streaked onto McBride Listeria agar (Biolife Code, 1602) and the suspected colonies were examined by the Herny method of oblique lighting (Herny, 1933).

Isolation and Identification:

For the duplicate wet swabs of the vaginal secretions, one swab was immersed in 9 ml listeria enrichment broth followed by weekly subculturing of the broth which was held at 4°C onto McBride Listeria agar (cold enrichment procedure). The other wet swab was immersed in 9 ml listeria enrichment broth and incubated at 30°C for 24-48 hours. Subcultures was made onto plates of McBride Listeria agar (selective enrichment procedures).

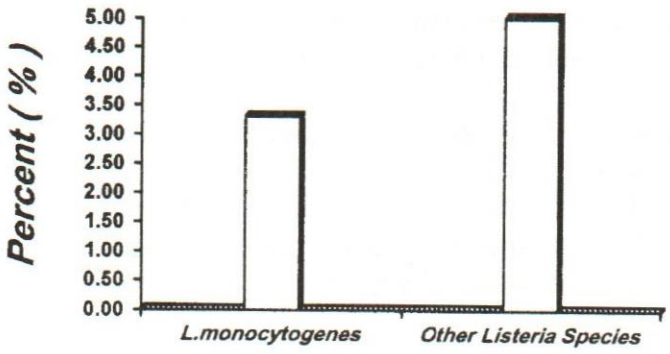
Identification of the suspected listerial isolates was made by Gram staining, catalase test, VP (Voges-Proskauer) reaction, methyl red test, nitrate reduction test, hydrogen sulphide on triple sugar iron agar slopes, and observation of umbrella like growth and motility in semisolid agar (Seeliger, 1961 and Lachia, 1990). Identification of the species was made by the observation of utilization of escuelin, rhamnose, xylose and mannitol, B-hemolysis on 5% sheep blood agar plate and CAMP test (Christie-Atkins-Munch-Peterson) with *staphylococcus aureus* (Seeliger & Jones, 1986).

RESULTS

The results of the present work are illustrated in the following tables:

Table 1: Existence of Listeria species in the vaginal discharges of the examined women

No. of Samples collected	No. of Positive specimens		The recovered Listeria Species			
			L. monocytogenes		Other Listeria Species	
	No.	%	No.	%	No.	%
60	5	8.3	2	3.3	3	5



Existence of Listeria species in the

Table 2: Clinical summary of five patients history, 2 of them episodes of Listeria monocytogenes.

Patient	Age	Pregnant	Abortion	Complain at time of sampling	Detection
A	30	1	2	Second abortion	Other Listeria
B	25	0	Habtiual	Threatned abortion	*L. monocytogenes*
C	33	0	Habtiual	After abortion	Other Listeria Species
D	29	2	2	Premature rupture of membrane	*L.monocytogenes*
E	29	4	0	Full term labour & Foetal distress	Other species of Listerioa

DISCUSSION

Infection of the pregnant woman leads to infection of her fetus either via the transplacental route or during delivery. Most cases of

listeriosis in pregnant women occur after the fifth month of pregnancy, but some have occurred before the fourth month (El-Gazzar & Marth, 1991). Upon recovery, the women may carry *Listeria monocytogenes* in the genital tract for some time, and this causes a problem in a subsequent pregnancy (Seeliger, 1961). Smeenk and Kamplemacher (1962) recovered *Listeria monocytogenes* from the vaginal discharges of apparently healthy pregnant women.

In the present study, the recovered listeria from the vaginal discharges was 5 (8.3%) of 60 tested samples (Table 1). Strains of *L. monocytogenes* were received from 2 (3.3%) and 3 (5%) identified as other listeria species. The incidence of *Listeria monocytogenes* in the two cases was higher than that founded by Mclauchlin et al. (1986) (0.6% and 2.1%) respectivley. Larsson et al. (1978) existed a higher incidence of *Listeria monocytogenes* in women amounted to 26.5%. Also Rappaport et al. (1960) reported the isolation of listeria monocytogenes from cervical secretion of 25 out of 34 (73.5%) women with listeriosis of repeated abortion. A summary of clinical information about these incidents is shown in table (2). One woman suffered from habitual abortion and at time of sampling she had threatned abortion. The other woman suffered from premature rupture of membrane and she had a history of habitual abortion. Enocksson et al. (1990) postulated that, listeriosis during pregnancy should always be considered as a threat to the fetus or in a pregnant women may result in late abortion, still-birth, or premature delivery with variable clinical symptoms of listeriosis in the neonates. The mother can be an asymptomatic carrier of listeriosis in her genital region. Post-partum isolation of listeria from vagina of such a women may sometimes be positive (Albutton et al., 1976). Bodey et al. (1968) suggests that reinfection, chronic infection or long term carriage of *L. monocytogenes* may occur, and that recurrent abortion due to listeriosis is possible. Lastly, Norys (1960) in citing a case of habitual abortion, gave a cirumstantial support of *Listeria monocytogenes* in some cases of habitual abortion.

The role of infected food in the pathogenesis of listeriosis is still undetermind, but it has been proposed that during pregnancy women should avoid drinking unpasteurized milk and eating raw eggs (Schlech et al., 1983). Pregnant women with professional close contact with animals, which may be infected with listeria, should obtain a high degree of personal cleanliness to avoid a possible infection.

Contamination may occur by various routes. These results suggested that contaminated foods component, especially salad vegetables and chicken, are probably the most common source. Cross-contamination from contaminated surfaces and utensils, unhygienic handling, inadequate washing and temperature abuse are also likely to be important factors. Diagnosis and treatment of a human with listeriosis is essential for saving his or her life. Also, prompt treatment will minimize problems encountered by the pregnant woman or her fetus. The other phase of control is to keep the susceptible people in healthy conditions by minimizing their exposure to *L. monocytogenes*. Midwifes have been infected by handling listeria carriers among pregnant women and thereafter transmitted the organisms to other patients (women or neonates). Faecal material or secretion from the genital region of carriers may contain listeria.

The remarkable isolation percentage found in 8.3% of samples, confirm the need for an intensive epidemiological surveillance on the spreading of listeria species and for proper preventive measures.

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