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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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بالرسالة صفحات

لم ترد بالأصل

HOSSAM MAGHRABY

Level of Inflammatory Mediators in Plasma of Platelet Concentrates and Beneficial Effect of Leucodepletion

THESIS SUBMITTED TO
THEODOR BILHARZ RESEARCH INSTITUTE

in

PARTIAL FULFILLMENT OF THE REQUIREMENT OF M.D. DEGREE IN *CLINICAL PATHOLOGY*

by

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محضر

أجتماع لجنة الحكم على الرسالة المقدمة من
الطبيبة / أمانى ابراهيم النقيب
توطئة للحصول على درجة الماجستير / الدكتوراة
فى الباثولوجيا الاكلينيكية والكيميائية

تحت عنوان : باللغة الانجليزية : Level of inflammatory mediators in the plasma of platelet concentrates and beneficial effect of leukodepletion.

: باللغة العربية : مستوى بعض المواد الالتهابية فى بلازما أكياس الصفائح الدموية وأثر الطبيب لنقل كريات الدم البيض

بناء على موافقة الجامعة بتاريخ ٢٩ / ٦ / ٢٠٠٥ تم تشكيل لجنة الفحص والمناقشة للرسالة المذكورة أعلاه على النحو التالى :-

١) أ.د. هدى على صابر ... عن المشرفين
٢) أ.د. صفاء الخواص مصطفى الخواص ... ممتحن داخلى
٣) أ.د. وجيه كيب ابراهيم ... ممتحن خارجى

بعد فحص الرسالة بواسطة كل عضو منفردا وكتابة تقارير منفردة لكل منهم إنعقدت اللجنة مجتمعة فى يوم الثلاثاء بتاريخ ١٩ / ٩ / ٢٠٠٥ بمقر التعليم الطبى بمدينة ٣ بكلية الطب - جامعة القاهرة وذلك لمناقشة الطالب فى جلسة علنية فى موضوع الرسالة والنتائج التى توصل إليها وكذلك الأسس العلمية التى قام عليها البحث .

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المشرف الممتحن	الممتحن الداخلى	الممتحن الخارجى
(هدى)	(صفاء)	(وجيه)

Abstract

Platelet transfusions are frequently accompanied by febrile non haemolytic transfusion reactions (FNHTRs) up to 30%. Leucocytes, the most fragile and least stable of all principal blood cells, have been implicated in the pathogenesis of these FNHTRs occurring in patients being transfused by stored platelet concentrates (PCs) contaminated by these leucocytes.

The aim of this study was to determine whether proinflammatory cytokines, acting as endogenous pyrogens, would accumulate in PCs during storage. We also aimed at studying the effect of filtration on release of some cytokines (e.g. IL-1, IL-6, IL-8 and TNF-α), as well as the effect of storage and filtration on platelet activation and release (by PF-4 assessment).

This study included twenty freshly prepared PCs, each of which was further divided into two equal portions, one of which was filtered. Both unfiltered and filtered portions were stored up to five days at 22°C. Samples assayed for leucocyte count, platelet count, IL-1β, IL-6, IL-8, TNF-α and PF-4 were withdrawn at different storage times (on days 0, 3 and 5) respectively.

Results and statistical analysis revealed a significant decrease in cytokine levels in filtered units compared with the unfiltered ones, that was directly correlated with the WBCs count reduction after filtration; whereas cytokine accumulation in the unfiltered PCs proved to be time dependant.

On the other hand PF-4 levels significantly increased in both unfiltered and filtered PCs throughout storage.

It is to be concluded that prestorage leucocyte reduction of PCs highly improved the quality of these PCs by minimizing cytokine accumulation, thus consequently expecting to reduce frequency and severity of FNHTRs.

Key Words
Platelet concentrates, Storage, Cytokine release, Leucofiltration, Platelet activation.

To my Parents,
Husband,
Daughter
and
Sons

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