INTRAVASCULAR DANGER SIGNALS GUIDE NEUTROPHILS TO SITES OF STERILE INFLAMMATION

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Neutrophils are recruited from the blood to sites of sterile inflammation, where they contribute to wound healing but may also cause tissue damage. By using spinning disk confocal intravital microscopy, we examined the kinetics and molecular mechanisms of neutrophil recruitment to sites of focal hepatic necrosis in vivo. Adenosine triphosphate released from necrotic cells activated the Nlrp3 inflammasome to generate an inflammatory microenvironment that alerted circulating neutrophils to adhere within liver sinusoids. Subsequently, generation of an intravascular chemokine gradient directed neutrophil migration through healthy tissue toward foci of damage. Lastly, formyl-peptide signals released from necrotic cells guided neutrophils through nonperfused sinusoids into the injury. Thus, dynamic in vivo imaging revealed a multistep hierarchy of directional cues that guide neutrophil localization to sites of sterile inflammation [**Science 2010;330: 362--360]**.

Ver vídeo: http://videolab.sciencemag.org/54477078001/635318282001/1

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HEMODILUTION THERAPY USING AUTOMATED ERYTHROCYTAPHERESIS IN CENTRAL RETINAL VEIN OCCLUSION: RESULTS OF A MULTICENTER RANDOMIZED CONTROLLED STUDY[1]

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BACKGROUND: Central retinal vein occlusion (CRVO) leads to poor visual outcome in most eyes. Abnormal hemorheology was suspected to play a major role in its pathogenesis. CRVO treatment is still a matter of debate but several studies have pointed out the efficacy of isovolumic hemodilution. The aim of this study was to assess the feasibility and efficacy of hemodilution using automated erythrocytapheresis in recent-onset CRVO.

METHODS: In this prospective randomized controlled multicenter study, 61 consecutive CRVO patients were enrolled when they met the following criteria: CRVO lasting for 3 weeks or less, visual acuity ranging from 20/200 to 20/32, age between 18 and 85 years, no diabetes, no uncontrolled systemic hypertension, no antiplatelet or anticoagulant therapy, hematocrit higher than 38%, and signed informed consent. Patients were randomly assigned to the hemodilution group (n=31) or to the control group (n=30). Hemodilution therapy consisted of one session of erythrocytapheresis on outpatient basis, followed by additional session(s) for 6 weeks if needed. Target hematocrit was 35%. Follow-up was 12 months.

RESULTS: No statistical differences in age, associated risk factors, or CRVO characteristics were observed at baseline between both groups. Mean visual acuity was equivalent to 20/80 in the hemodilution group and to 20/63 in the control group (non-significant difference). In the treated group, mean number of hemodilution sessions was 3.3 (range, 1 to 6), and no major side-effects occurred. At the 12-month follow-up visit, 64.5% of the hemodilution group had visual acuity of 20/40 or better compared to 40% of the control group (p=.048). Visual change was a gain of 1.7 ETDRS line in the hemodilution group versus a loss of 2.3 lines in the control group (p=.007). There was less conversion into an ischemic form in the hemodilution group (11%) than in the control group (50%, p=.004). Mean final retinal thickness was 289 µm in the hemodilution group versus 401 µm in the control group (p=.068).

CONCLUSIONS: This multicenter controlled randomized study demonstrated that automated erythrocytapheresis is a safe and effective tool for performing hemodilution and confirmed that hemodilution therapy can improve the final prognosis of CRVO when applied in the early phase of the disease [**Graefes Arch Clin Exp Ophthalmol. 2010, Oct 17**].

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AGREEMENT BETWEEN ERYTHROCYTE SEDIMENTATION RATE AND C-REACTIVE PROTEIN IN HOSPITAL PRACTICE[1]

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BACKGROUND: Erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) are frequently prescribed jointly. The usefulness of this practice is uncertain.

METHODS: All patients with ESR and CRP measured at the same time in an academic tertiary hospital during a 1-year period were included. Concomitant measures of serum creatinine, hematocrit, and anti-Xa activity were recorded to study non-inflammatory cause of increased ESR. Level of agreement between ESR and CRP was assessed with kappa coefficient, and their accuracy was determined in a medical chart review of 99 randomly selected patients with disagreement between both markers.

RESULTS: Among 5777 patients, 35% and 58% had an elevated CRP and ESR, respectively. ESR and CRP were in agreement in 67% of patients (both elevated in 30%, both normal in 37%). A disagreement was observed in 33% (elevated ESR/normal CRP in 28%, normal ESR/elevated CRP in 5%). The kappa coefficient showed poor agreement (k=0.38) between both markers. Review of medical chart showed that 25 patients with elevated CRP and normal ESR had an active inflammatory disease (false-negative ESR). Conversely, 74 patients had elevated ESR and normal CRP-32% had resolving inflammatory disorders, 28% disclosed a variable interfering with the ESR measure (false-positive ESR), 32% had unexplained discrepancies, and 8% had an active inflammatory disease (false-negative CRP).

CONCLUSION: In hospital practice, joint measurement of ESR and CRP is unwarranted. Because of slow variation and frequent confounding, ESR is frequently misleading in unselected patients. When an inflammatory disorder is suspected, priority should be given to CRP. **[Am J Med. 2010; 123(9):863.e7-13]**

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