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Outcome of vascular interventions in Takayasu arteritis

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Introduction. – Multiple arterial occlusions are common in Takayasu Arteritis (TA) patients in whom immunosuppressive therapy prior to and following vascular interventions, results in prolonged survival of stents.

Methods. – This is a twenty-five year study (1987–2012) of 262 TA patients in Chennai, India, evaluated using the Disease Extent Index for TA, Indian Takayasu Activity Score and Takayasu Arteritis Damage Score. The outcome of vascular interventions, in terms of perioperative morbidity, patency and reocclusion are reported. 158 TA patients (46 men and 112 women; mean age: 32.34 years) underwent 246 interventions: percutaneous transluminal renal angioplasty and stenting (PTA/R): 104; angioplasty and stenting of aorta: 46; autotransplantation of kidneys: 12; nephrectomies: 11; CABG surgeries: 32; coronary angioplasty and stenting: 68; iliac-renal artery bypass grafting with Saphenous vein: 3. ascending aorta-abdominal aorta bypass grafts: 4; aorta-femoral by-renal aorta bypass grafting: 3; aorta-renal artery bypass grafting: 4; femoral and axillo-popliteal bypass grafting: 4; ascending aorta-infra-aorto-iliac endarterectomies: 4; aorta-femoral bypass grafting: 6; axillo-plasty and stenting: 42; grafts from ascending aorta to carotids: 8; stenting: 68; subclavian angioplasty and stenting: 36; carotid angioplasty and stenting of aorta: 46; autotransplantation of kidneys: 11; CABG surgeries: 32; coronary angioplasty and stenting: 68; iliac-renal artery bypass grafting with Saphenous vein: 3. The patency of stents was evaluated at 6 monthly intervals by Doppler, with low reocclusion rates. Adequate immunosuppression should be maintained following vascular interventions to prevent reocclusions.

Further reading

http://dx.doi.org/10.1016/j.lpm.2013.02.160

P90

14-3-3 in large vessel vasculitis: A novel antigen

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Introduction. – Large Vessel Vasculitis (LVV) including Giant cell arteritis (GCA), Takayasu arteritis (TA) and focal aortitis has a predilection for the aortic arch. GCA and TA are incurable and may produce profound morbidity and disability. While the pathogenesis of LVV has become better understood, the cause(s) is still unknown. We have sought to identify aortic Ag that may drive the immune response.

Methods. – In collaboration with Center of Aortic Diseases at Cleveland Clinic, from over 1100 thoracic aorta (TA) surgeries in 2 years, we have thus far collected 132 TA biopsies, autologous plasma, serum and DNA from GCA, TAK and focal aortitis patients and non-inflammatory disease controls (matrix abnormalities). We have studied 23 tissue lysates as well as 22 sera (6 LVV, 6 control and 10 non-related autoimmune disease).

Results. – We have found preferential Ab binding to LVV to an endogenous 30 KD protein in tissue lysates from human aorta (both patient and control). By mass spectroscopy, the reactive Ag is a member of 14-3-3 protein family. Total 14-3-3 expression did not differ in tissue lysates of control vs. LVV patients. We are currently investigating various isoforms of the 14-3-3 family in LVV and control aortas.

Discussion. – The 14-3-3 family consists of 7 isoforms that are highly conserved and have important cellular and signaling functions in health and disease. Several isoforms of 14-3-3 are known to induce Ab responses in diseases such as lung cancer and infectious diseases. In LVV, it is not known whether 14-3-3 is modified or if there is loss of tolerance to native protein. This question will be the focus of further studies.

Conclusion. – This novel albeit preliminary finding of anti-14-3-3 Ab in LVV may provide further insight into disease pathogenesis. Further studies will explore whether specific anti-14-3-3 isoforms are modified and targeted in LVV. If that is the case, anti-14-3-3 and circulating 14-3-3 may be useful as diagnostic and disease activity biomarkers.

Further readings

http://dx.doi.org/10.1016/j.lpm.2013.02.161

P91

Methotrexate plus prednisone in patients with relapsing chronic periaortitis

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Introduction. – Chronic periaortitis (CP) is a rare, chronic-relapsing disease. The treatment of flaring CP is challenging, but no studies are available. We evaluated feasibility of a methotrexate and prednisone regimen in relapsing CP patients.

Methods. – The trial was open-label, prospective, non-randomised. Inclusion criteria were relapsing CP and an age between 18 and 85 years. Sixteen patients were treated with methotrexate and prednisone for 12 months; afterwards, the physician was free to decide whether or not the treatment should be discontinued. The primary end-point was the remission rate at month 12; secondary end-points were changes in erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), paraaortic tissue thickness, estimated glomerular filtration rate (eGFR) and resolution of ureteral obstruction.

Results. – After 12 months, 14 (88%) patients were assessable; 11 of them (79%) were in remission while one withdrew therapy because of...
totoxicity and two had treatment failures. CRP, ESR and periaortic tissue thickness variations during the follow-up are shown in Supplementary data (respectively in panel A, B, and C; red line represents the average change): ESR and CRP significantly decreased ($P = 0.001$ and $P = 0.006$ at month 12 versus baseline) while a reduction in periaortic tissue thickness was also observed although non-statistically significant. The periaortic tissue evolution in one patient at baseline, month 6 and 12 is reported in panel D, E and F of Supplementary data. At month 12 an eGFR improvement was also observed although non-statistically significant; moreover of the six patients presenting with obstructive uropathy, only one had hydropnephrosis and two an ureteral stent at month 12. The patients who continued treatment beyond month 12 had a longer relapse-free survival than those who withdrew it ($P < 0.005$).

**Conclusion.**—The combination of methotrexate and prednisone is a feasible option for relapsing CP. Prolonged treatment is likely to avoid further relapses.

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**Table I**

**Vessel-specific outcome.**

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of lesions at FU</th>
<th>Angiographic FU (%)</th>
<th>FU duration (months)</th>
<th>Original occlusion</th>
<th>Active disease at PI-1 (%)</th>
<th>Number of PIs</th>
<th>Successful outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aorta</td>
<td>97</td>
<td>86%</td>
<td>30 ± 37</td>
<td>7%</td>
<td>51%</td>
<td>1.37</td>
<td>86%</td>
</tr>
<tr>
<td>Renal</td>
<td>112</td>
<td>87%</td>
<td>38 ± 28</td>
<td>12%</td>
<td>59%</td>
<td>1.38</td>
<td>87%</td>
</tr>
<tr>
<td>Carotid</td>
<td>97</td>
<td>85%</td>
<td>27 ± 28</td>
<td>37%</td>
<td>48%</td>
<td>1.40</td>
<td>85%</td>
</tr>
<tr>
<td>Subclavian</td>
<td>176</td>
<td>93%</td>
<td>28 ± 28</td>
<td>37%</td>
<td>48%</td>
<td>1.60</td>
<td>83%</td>
</tr>
<tr>
<td>Mesenteric</td>
<td>42</td>
<td>93%</td>
<td>33 ± 34</td>
<td>2%</td>
<td>62%</td>
<td>1.43</td>
<td>87%</td>
</tr>
<tr>
<td>All vessels</td>
<td>503</td>
<td>87%</td>
<td>28 ± 28</td>
<td>35%</td>
<td>62%</td>
<td>1.43</td>
<td>87%</td>
</tr>
</tbody>
</table>

FU: follow-up after final percutaneous intervention (PI). PI-1: first PI.

*Presence of both ESR > 20 mm/hr and CRP > 6 mg/L.

**Conclusion.**—Repeated PI's using contemporary techniques to treat large-vessel lesions in TA yield high sustained success rates with low related risk.

http://dx.doi.org/10.1016/j.lpm.2013.02.163

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**P92**

**Outcome of 1516 percutaneous interventions in 401 patients with Takayasu arteritis – a single-center experience from South India**

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**Introduction.**—During 1996–2012, 401 patients with Takayasu arteritis (TA; age 29 ± 12 years, range 4–64 years; 297 females; type-%: I-18, II-9, III-6, IV-16, V-51), all of whom met clinical criteria for TA (88% also met ACR criteria), underwent 1516 percutaneous interventions (PI) to treat 1044 lesions (712 stenoses, 317 occlusions, 15 aneurysms; 77% symptomatic; PIs/lesion 1.45, range 1–6), median lesions in 12 (range 1–7) in large-vessels (aorta 168, renal 253, carotid 159, subclavian 285, mesenteric 85, others 94) at a tertiary care center; at PI-1, 54% had both ESR > 20 mm/hr and CRP > 6 mg/L, 28% either, and 18% neither; all received long-term immunosuppressive therapy.

**Methods.**—Obstructive lesions were dilated at 12 ± 6 atm pressure (5% needed > 20 atm); 869 (83%) lesions were stented; stented segment length was 50 ± 42 mm, range 6–250 mm. Non-compliant balloons (25%) and cutting balloons (12%) were used for resistant lesions. Early and follow-up (FU) outcomes were analyzed. PI success was defined as < 50% residual stenosis/excluded aneurysm without major complications; ≥ 50% stenosis at FU was considered re-stenosis (RS).

**Results.**—Early outcome of 1044 PI-1 procedures was: success 974 (93%), sub-optimal/complicated 47 (5%), failure to cross occlusion 23 (2%). FU obtained in 659 PI-1 lesions: 308 (47%) had sustained success, but 351 had RS. PI-2 was done on 317 RS lesions: 205 had FU, 91 (44%) success, 114 RS, 6 FU, 32 (33%) success, 42 RS-3; PI-4: 40 lesions, 25 FU, 12 (48%) success, 13 RS-4; PI-5: 10 lesions, 6 FU, 3 success, 3 RS-5. The cumulative benefit of repeated PI yielded an overall success rate of 435/503 (87%), uncrossable and FU-awaited lesions excluded) at a mean FU of 33 ± 34 months after the final PI. Significant complications were: death 6 (0.4%), arterial rupture 22 (1.4%), intracranial bleed 8 (0.5%), stent thrombosis 22 (1.4%) (table I).

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**Discussion.**—Decreased risk of AD among older patients with AA may indicate mortality from other causes before the AA could be clinically symptomatic whereas technological advances in imaging and/or surgery may have led to the observation of decrease in AD with calendar year of AA diagnosis.

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**Supplementary data associated with this article can be found on the website of La Presse Médicale (http://www.em-consule.com/revue/lpm).**

http://dx.doi.org/10.1016/j.lpm.2013.02.162

**P93**

**Aortic dissection in giant cell arteritis: A population-based study of predictors**

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**Introduction.**—Aortic manifestations are associated with increased mortality in giant cell arteritis (GCA). Size is a main determinant of aortic dissection (AD) in aortic aneurysms (AA) from non-inflammatory causes. Our aim was to explore risk factors for AD in patients with GCA and AA.

**Methods.**—We used a population-based incident cohort of patients diagnosed with GCA from 1950–2004. All patients with AA in the 1 year prior to GCA diagnosis or any time thereafter were included. Cox proportional hazard models were used to evaluate risk factors for AD.

**Results.**—The study included 33 patients (91% women), mean age at diagnosis of AA 83.6 years. Median duration of GCA prior to diagnosis of AA was 8.7 years. Location of AA was thoracic in 13 (39.4%) and 15 patients (45.5%) had abdominal AA (24.2%) and both thoracic and abdominal in 12 patients (36.4%). Eight patients developed AD (3 AD diagnosed same time as AA).

**Discussion.**—Increasing age (HR 0.27 per 10 yrs, 95% CI 0.09, 0.86) and calendar year of AA diagnosis (HR 0.29 per 10 yrs, 95% CI 0.13, 0.69) were associated with decreased risk of AD. Cumulative glucocorticoid dose (HR 0.94, 95% CI 0.82, 1.07) or cumulative erythrocyte sedimentation rate (ESR) (HR 0.98, 95% CI 0.96, 1.00) were not associated with AD. Mean size of thoracic AA in 4 patients with dissection was 4.88 (range 3.2–8.4) cm in 15 patients without AA (HR = 0.65). Size of the AA at diagnosis (HR 1.33, 95% CI 0.40, 4.42) or maximal size of thoracic AA (HR 1.17, 95% CI 0.69, 1.99) was not associated with AD.

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