NEPHROLOGY IN A CRISIS AREA: SYRIA

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Commercial Conflicts of Interest: None
The Team

The Syrian American Medical Society (SAMS)

The Syrian National Kidney Foundation (SNKF)

Non-Profit, Non-Religious, Non-Political US Based Organizations

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OUTLINE

• The Syrian Conflict
• Is renal care a priority and ethical questions
• Description and organization of renal care provided to Syrians during the conflict
• Challenges, solutions and compromises
• Cultural issues
• Challenging cases
The Syrian conflict

- Started 2011 as peaceful demonstrations
- Escalated into a world, regional & civil war
- Death toll more than 500,000, mostly civilians
- Internally displaced people over 6 million
- Refugees over 5 million
- More than 100,000 detained or disappeared
- Demographic change
- Weaponization and politicization of aid and healthcare to civilians
WEAPONISATION OF HEALTH CARE IN SYRIA

TARGETING HEALTH WORKERS
814 medical personnel killed from 2011 to February 2017

EXODUS OF HEALTH WORKERS
15,000 of Syria’s 30,000 doctors had left by 2015

ATTACKING HEALTH-CARE FACILITIES
Targeting of health-care facilities is increasing

2012
91
2016
199

CRIMINALISING MEDICAL NEUTRALITY
In 2012 a counter-terrorism law effectively criminalised medical aid to the opposition

VIOLATING INTERNATIONAL LAW
Targeting health care to the extent occurring in Syria is unknown in any previous war

BESIEGING MEDICINE
Areas under siege rarely allowed entry of essential medicines and surgical supplies

Find out more: www.thelancet.com/commissions/Syria
The Geographical Variation of Support to Civilian Patients in the Syrian Conflict

<table>
<thead>
<tr>
<th>AREA</th>
<th>IMPACT ON CIVILIANS</th>
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</thead>
<tbody>
<tr>
<td>Government controlled</td>
<td>No air bombing, more conventional international aid, aid controlled by government</td>
</tr>
<tr>
<td>Non-Government controlled, not besieged</td>
<td>Air bombing, non-traditional aid, new health care system, poor coordination</td>
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<tr>
<td>Non-Government controlled, besieged</td>
<td>Air bombing, very hard to get aid inside</td>
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<tr>
<td>ISIS controlled</td>
<td>Air bombing, NGO’s reluctance,</td>
</tr>
<tr>
<td>Refugees in a country where government provides care to refugees</td>
<td>Health care quality better even compared to pre-crisis provided by government</td>
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<tr>
<td>Refugees in a country with no governmental support to refugees</td>
<td>Reliance on aid from NGO’s, UNHCR, private donors, poor coordination</td>
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Is Renal Care a Priority in a Conflict Setting?

NO

- More important things
- Expensive
- Complicated provision System
- Hard to identify patients except for ESRD

YES

- The rule of rescue: A perceived duty to save endangered life where possible
- Victims are civilians
- Earmarked budgets
OTHER ETHICAL ISSUES

• Foregoing renal replacement therapy
• Protection of workforce
• Different standards of care
• Delegation of responsibilities to non-physician clinicians (task shifting )
• Responsibilities of host countries

## SNKF / SAMS Renal Group

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>TOOLS</th>
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<tbody>
<tr>
<td>Care Provision</td>
<td>Group texting</td>
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<td></td>
<td>Teleconferencing</td>
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<td></td>
<td>Telemedicine</td>
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<td></td>
<td>Care Protocols</td>
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<td></td>
<td>Innovations</td>
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<td>Assessment</td>
<td>Quality improvement</td>
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<td>Monitoring and evaluation</td>
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<td>Literature reviews</td>
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<tr>
<td>Education</td>
<td>Live courses</td>
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<tr>
<td></td>
<td>Teleconferencing</td>
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<td></td>
<td>Onsite visits</td>
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<td>Publications</td>
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<tr>
<td>Advocacy</td>
<td>Lay media, policy makers.</td>
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</table>
Conflict Nephrology Publications Prior to Syrian Conflict

• Eight Dialysis papers (Kuwait, Afghanistan, Balkan, Iraq)

• Outcomes: Patient deaths, facilities destruction, loss of man power, patients becoming refugees, overwhelming the host facilities

• Disruptions of care provision in transplantation

• Iran adopted a compensated kidney donor program for Afghani refugees, 62 transplants

Care and outcomes of ESKD patients in times of armed conflict: recommendations for action; Isreb MA, Rifai AO, Murad LB, Al-Makki A, Al-Saghir F, Sekkarie MA. Clin Nephrol. 2016 May; 281-8
The status of preexisting dialysis centers in the provinces of Aleppo, Homs, and Idlib, Syria in 2013.

- **Operational**: 20 centers
- **Closed due to destruction, theft, occupation**: 7 centers
- **Closed due to lack of funding**: 6 centers
- **Status unknown**: 11 centers

Nephrology in Government Areas

- No accurate data
- Continuation of the old system of private sector + government run facilities
- In Syria, the number of annual kidney transplants declined from 385 in 2010 to 154 in 2013 (60%)
- The number of operational kidney transplant centers has decreased from 8 to 4 centers
- Decreased human and material resources
- Violations of the “Declaration of Istanbul”

Patient-related processes and outcomes in non-government areas

- For many patients, blood transfusion was the only method for anemia management
- Many essential tests not available
- It is common for the same patient to receive dialysis at more than one center according to safety concerns and functionality of the center
- Outdated machines
- Inadequate water treatment
- Most facilities had no nephrologist
Patient-related processes and outcomes in non-government areas

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Interruption of Dialysis

• Death of about half of 35 patients in 2011 from lack of dialysis after the occupation and closure of a hospital based dialysis facility by armed forces
• In one dialysis center, all 18 patients reported going at least one week without dialysis because of inability to get to a clinic
• Many patients reported various forms of harassment at checkpoints that led to inability to access facilities; confiscation of dialysis supplies, and abuse
Post-transplant management non-government area

- Difficulties in securing anti-rejection medications from government areas due to low availability and major transportation difficulties
- Medications donated by NGO’s (MSF, IR, SAMS)
- Provision by missions (Jordan) and an endocrinologist who is a transplant patient in Syria
- Outcomes seem reasonable based on short term follow ups
Task Shifting: The Super Technician

- Patient Care
- Machines maintenance
- Water treatment
- Dietitian
- Social Worker
Rationing Methods
Circumstances dependent

• Reducing frequency of dialysis
• Reducing duration of sessions
• Reducing dialysate flow
• Manual reuse of dialyzers
• Extreme dietary restrictions
• ?? Probiotics / Gum Arabic (acacia gum)
Barriers to PD Implementation

• Cost
• Cultural / Educational
Anemia management protocol (Ferritin measurement not available):

- Keep HB 8-10 gm/dl & Fe saturation 25-50%
- All patients should be on oral iron
- If iron saturation is < 25% administer 5 doses of 100 mg IV iron
- EPO 4000 units SC weekly; Hold if HB is > 10
The Effect of War on Syrian Refugees With ESRD (Jordan) *KI reports* 2.5 (2017): 960-963.

- The estimated prevalence of dialysis requiring ESRD was 189 patients per million refugees
- All patients were receiving hemodialysis
- 68% received dialysis 3 times a week, 30% twice a week, and 1% once a week at certified facilities
- Funding provided by Syrian diaspora organizations for 84% of patients
- The cost of the dialysis session without anemia medications or vitamin D was about US $85
The Effect of War on Syrian Refugees With ESRD (Jordan) *KI reports* 2.5 (2017): 960-963.

<table>
<thead>
<tr>
<th>Category</th>
<th>Number (Percentage)</th>
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<tbody>
<tr>
<td>Average age (range)</td>
<td>47 (infants to 90 yr)</td>
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<tr>
<td>Female</td>
<td>32 (56%)</td>
</tr>
<tr>
<td>Diabetic</td>
<td>21 (37%)</td>
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<tr>
<td>Hepatitis C positive</td>
<td>8 (14%)</td>
</tr>
<tr>
<td>Native fistula vascular access</td>
<td>46 (81%)</td>
</tr>
<tr>
<td>Feels severely sad and frustrated</td>
<td>20 (35%)</td>
</tr>
<tr>
<td>Feels that he/she is a major burden</td>
<td>21 (37%)</td>
</tr>
<tr>
<td>Considers dialysis discontinuation</td>
<td>15 (26%)</td>
</tr>
<tr>
<td>Lives in a tent</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Unable to get medications consistently</td>
<td>51 (89%)</td>
</tr>
</tbody>
</table>
Caring for Refugees with ESRD in Europe

- Refugees constitute about 1.5% of the dialysis population
- Some migrate to get better ESRD care
- Debatable Policies on treatment, coverage and transplantation provision

Cultural Challenges When Treating Refugees with Kidney Disease

• Most refugees are of Muslim faith
• Diversity among refugees
• Important considerations: Dietary / Religious practices / Linguistic / Gender relations / Mental health / End of life care

Cultural Challenges

- No Pork / No Alcohol
- High potassium diet
- Heparin
- Translation errors and biases
- Fasting in Ramadan
- The Pap Smear
- RRT Modalities
- Paternalism


• A 30 year old woman developed excessive bleeding attributed to uterine inertia following stillbirth, she received 19 units of blood. She required intubation and mechanical ventilation. She became febrile, unresponsive, oliguric, and hypertensive. Creatinine 404 micro-mol / L, Potassium 6.2 meq / L, HCO3 15.4 meq / L CVP 32 cm H2O. No conventional hemodialysis machine in ICU, nearby outpatient HD facility was non functional due to an unexpected winter storm that froze the water system.
Aleppo December 2016

Health care facilities in non-government areas bombed and became non-functional, evacuation delayed, many ESRD patients had no dialysis for several days and started to become more symptomatic.

Dialysis technician called, he moved a machine to a school, he has electricity from a generator, has supplies but no treated water.
Internet Search 45 days later

“poisoning, alopecia, abdominal pain constipation, neuropathy”: “Thallium Toxicity”
Confirming the Diagnosis and Treatment

- Toxicology lab confirmed the diagnosis
- Hemodialysis at that stage would not be effective
- Prussian Blue
- Where did the Thallium come from?