Pain syndromes in patients with ESKD

Polycystic Kidney Disease
Carpal Tunnel Syndrome
Intra-dialytic headaches

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Autosomal Dominant Polycystic Kidney Disease

10-15 % of ESKD

Up to 70 % of patients have severe pain.

Badani KK et al. *J Postgrad Med* 2004; 50 : 222-226

Despite this, clinical trials in pain management are limited.

Acute pain may be due to :

1. Mass effect of the enlarged kidney(s)
2. Cyst haemorrhage
3. Cyst infection
4. Pyelonephritis
5. Nephrolithiasis (20 %)

Chronic pain may be due to :

1. Mass effect on renal parenchyma and capsule
2. Pressure effect – lumbar lordosis - back pain

Management

- Attempt to determine the cause of the pain
- Treat any reversible cause eg. infection

Management

Commence with conservative, non-surgical approaches :

- Non-pharmacological – heat/ice applications, massage, supporting garments
- Pharmacological – analgesics

Bajwa ZH et al. Pain management in polycystic kidney disease. *Kidney Int* 2001; 60: 1631-1644.

Interventional management

- Celiac plexus block
- Surgical

Indications for surgical management :

1. Uncontrolled hypertension
2. Severe pain not responsive to analgesia.
3. Worsening renal function due to cysts
4. Recurrent infections
5. Haematuria with haemorrhage

Surgical

- Cyst aspiration
- Sclerotherapy
- Laparoscopic decortication
- Nephrectomy

Carpal Tunnel syndrome

Carpal Tunnel Syndrome (CTS)
is a monotherapy of the median nerve
as it passes through the flexor retinaculum at the wrist.

The predominant cause in CKD patients is
amyloid deposition (beta-2-macroglobulin)
on the surface of the tenosynovium of the flexor tendons
causing an extrinsic compression of the median nerve.

Presents :

Pain and parathesias in the distribution
of the median nerve
typically nocturnal.

Many patients experience symptoms while on dialysis.

Mean weighted prevalence in dialysis patients = 18.6 %

Prevalence no different in HD and PD

Incidence increases with years on dialysis

Davison S et al. Pain in Chronic Kidney Disease : A Scoping Review.
Seminars in Dialysis 2014; 27(2): 188-204.

Assessment Tool

Boston Carpal Tunnel Questionnaire (BCTQ)
Validated tool for the general population
11 items, including pain and functional status.

Levine DW et al. *J Bone Joint Surg Am* 1993; 75: 1585-1592.

Management

The principal management of CTS is surgical decompression

Most patients experience
a significant improvement in symptoms
including pain.

Shiota E et al *J Hand Surg* 2001;26: 529-532.
Sivri A et al. *Scand J Rheumatol* 1994; 23 : 287-290.

Pharmacological management :

1. There care no consensus guidelines on the pharmacologic management of CTS in CKD.

2. Pharmacologic management of neuropathic pain.

Intra-dialytic headaches

Definition- International Headache Society (2004)

At least 3 attacks of acute headaches fulfilling the following criteria :

1. Patient is on HD

2. Headaches develop during at last half of the HD sessions.

3. Headaches resolve within 72 hours of the HD session and/or ceases altogether after a successful transplantation.

Estimated that it is experienced by
up to 48 % of dialysis patients

Goksan B et al. *Cephalgia* 2004; 24: 284-287
Antoniazzi A et al. *Cephalgia* 2003; 23 : 146-149
Bana DS et al. *Headache* 1972; 12 : 1-14.

Aetiology is unclear

Associations

- Elevated pre-dialysis BP.
- Greater reduction in urea, postulated to result in brain oedema.
- Elevated s. Calcium and s. phosphate, reduced magnesium may cause cerebral vasoconstriction and an inability to autoregulate.

Management

There are no specific guidelines on the management of IDH

- Sodium ramping
- Individualised dialysate sodium concentrations

- Midodrine
- ACE-Inhibitors
- Avoid Ergotamine – risk of vasoconstriction

Shortening dialysis treatments from 4 to 2 hours

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1. Davison S, Koncicki H, Brennan F. Pain in Chronic Kidney Disease : A Scoping Review. *Seminars in Dialysis* 2014; 27(2): 188-204.

2. Koncicki H, Brennan F, Vinen K, Davison SN. An approach to pain management in End Stage Renal Disease – Considerations for General Management. *Seminars in Dialysis*. April 11 2015